
The 2009 HMDA Data: The Mortgage Market in a Time of Low Interest Rates and Economic Distress

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Data made available annually pursuant to the Home Mortgage Disclosure Act of 1975 (HMDA) provide an opportunity to explore changes in mortgage market activity along a host of dimensions.¹ HMDA requires most mortgage lending institutions with offices in metropolitan areas to publicly disclose information about their home-lending activity each year. The data include the disposition of each application for mortgage credit; the type, purpose, lien status, and characteristics of the home mortgages that lenders originate or purchase during the calendar year; loan pricing information; the census-tract designation of the properties related to these loans; personal demographic and other information about the borrowers; and information about loan sales.² The disclosures are used to help the public determine whether institutions are adequately serving their communities' housing finance needs, to facilitate enforcement of the nation's fair lending laws, and to inform investment in both the public and private sectors. The data have also proven to be valuable as a research tool, providing insights in many fields of interest.

The Federal Reserve Board currently implements the provisions of HMDA through regulation.³ The Federal Financial Institutions Examination Council (FFIEC) is responsible for collecting the HMDA data and facilitating public access to the information.⁴ In

September, the FFIEC releases summary tables pertaining to lending activity from the previous calendar year for each reporting lender and aggregations of home-lending activity for each metropolitan statistical area (MSA) and for the nation as a whole.⁵ The FFIEC also makes available to the public an application-level data file containing virtually all of the reported information for each lending institution.⁶

The 2009 HMDA data consist of information reported by more than 8,100 home lenders, including the nation's largest mortgage originators, and thus are broadly representative of all such lending in the United States. The regulations that implement HMDA have been essentially unchanged since 2002, with one notable exception. The rules related to the reporting of pricing data under HMDA were revised in 2008. The new procedures affect whether or not a loan is classified as higher priced starting with applications taken on October 1, 2009. Thus, the 2009 HMDA data reflect two different loan pricing classification rules, although, for the majority of the year and for most loans originated in 2009, the older rules applied. The effects of the rule change on reported higher-priced lending are explored in some depth in this article.

agencies responsible for the examination and supervision of financial institutions. The member agencies are the Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation, the National Credit Union Administration, the Office of the Comptroller of the Currency, the Office of Thrift Supervision, and representatives from state bank supervisory agencies.

5. For the 2009 data, the FFIEC prepared and made available to the public 48,563 MSA-specific HMDA reports on behalf of reporting institutions. The FFIEC also makes available to the public reports about private mortgage insurance (PMI) activity. All the HMDA and PMI reports are available on the FFIEC's reports website at www.ffiec.gov/reports.htm.

6. The only reported items not included in the data made available to the public are the loan application number, the date of the application, and the date on which action was taken on the application. Those items are withheld to help ensure that the individuals involved in the application cannot be identified.

1. A brief history of HMDA is available at Federal Financial Institutions Examination Council, "History of HMDA," webpage, www.ffiec.gov/hmda/history2.htm.

2. A list of the items reported under HMDA is provided in appendix A.

3. HMDA is implemented by Regulation C (12 C.F.R. pt. 203) of the Federal Reserve Board. Information about the regulation is available at www.federalreserve.gov.

4. The FFIEC (www.ffiec.gov) was established by federal law in 1979 as an interagency body to prescribe uniform examination procedures, and to promote uniform supervision, among the federal

SUMMARY OF FINDINGS

This article offers a summary and preliminary analysis of the 2009 HMDA data. The results of our analysis reveal the following about mortgage lending in 2009:

- After substantial declines in loan volume in 2007 and 2008, overall loan volume rebounded in 2009, though it remained well below the levels observed in the middle of the decade. This increase obscures divergent trends. While refinance activity increased sharply, likely as a result of historically low interest rates, home-purchase lending continued to decline in 2009.
- The increase in refinancing activity in 2009 appears to have been somewhat subdued compared with what has historically been observed when mortgage rates sharply decline. Evidence presented in this article suggests that the more muted growth stems from several factors, including economic distress and low or negative equity among many households that could have benefited from lower rates.
- The decline in home-purchase lending could have been more dramatic were it not for first-time homebuyers. Those homebuyers benefited not only from certain market conditions such as historically low interest rates and falling house prices, but also from a federal tax credit of \$8,000 and the fact that they did not need to sell a house in a depressed economic environment.
- The percentage of home-purchase borrowers classified as lower-income under HMDA rose significantly in 2009 but did not rise in the refinance market. Lower-income home-purchase borrowers were also disproportionately likely to take out Federal Housing Administration (FHA) or Department of Veterans Affairs (VA) loans.

- The substantial growth in the portion of new home mortgages that were backed by the FHA, VA, or federal farm programs during 2008 continued in 2009, with such loans accounting for 54 percent of all home-purchase lending. One factor likely playing a role in this growth is the pullback by the government-sponsored enterprises (GSEs)—Fannie Mae and Freddie Mac—and private mortgage insurers from the high loan-to-value (LTV) ratio market.
- An analysis of the HMDA pricing data in 2009 is complicated by the steepening yield curve and the transition to new HMDA reporting rules for pricing. Comparisons of pricing outcomes across racial and ethnic groups are particularly problematic for this reason. Nevertheless, the data appear to indicate that high-risk lending activity remained at very low levels during 2009, with no indication of a rebound.
- Lending activity in census tracts with high foreclosure activity has declined more than in other neighborhoods. This decline has been particularly severe for refinance lending. Declines in home-purchase lending in high-foreclosure tracts have been similar to those observed for other tracts in the same MSAs.
- Denial rate differences across racial and ethnic groups persist, although the HMDA data do not include sufficient information to determine the extent to which these differences stem from illegal discrimination.

AN OVERVIEW OF THE 2009 HMDA DATA

HMDA covers most mortgage lending institutions, including all of the largest lenders. From the inception of HMDA, depository institutions have constituted

1. Distribution of reporters covered by the Home Mortgage Disclosure Act, by type of institution, 2000–09

Number

Year	Depository institution				Mortgage company			All institutions
	Commercial bank	Savings institution	Credit union	All	Independent	Affiliated ¹	All	
2000	3,609	1,112	1,691	6,412	981	332	1,313	7,725
2001	3,578	1,108	1,714	6,400	962	290	1,252	7,652
2002	3,628	1,070	1,799	6,497	986	310	1,296	7,793
2003	3,642	1,033	1,903	6,578	1,171	382	1,553	8,131
2004	3,945	1,017	2,030	6,992	1,317	544	1,861	8,853
2005	3,904	974	2,047	6,925	1,341	582	1,923	8,848
2006	3,900	946	2,037	6,883	1,334	685	2,019	8,902
2007	3,918	929	2,019	6,866	1,132	638	1,770	8,636
2008	3,942	913	2,026	6,881	957	550	1,507	8,388
2009	3,925	879	2,017	6,821	914	389	1,303	8,124

NOTE: Here and in all subsequent tables, components may not sum to totals because of rounding.

1. Subsidiary of a depository institution or an affiliate of a bank holding company.

SOURCE: Here and in subsequent tables and figures except as noted, Federal Financial Institutions Examination Council, data reported under the Home Mortgage Disclosure Act (www.ffiec.gov/hmda).

2. Home loan activity of lending institutions covered under the Home Mortgage Disclosure Act, 2000–09

A. Applications, requests for preapproval, and purchased loans

Number

Year	Applications received for home loans, by type of property				Requests for preapproval ¹	Purchased loans	Total
	1–4 family			Multifamily			
	Home purchase	Refinance	Home improvement				
2000	8,278,219	6,543,665	1,991,686	37,765	n.a.	2,398,292	19,249,627
2001	7,692,870	14,284,988	1,849,489	48,416	n.a.	3,767,331	27,643,094
2002	7,406,374	17,491,627	1,529,347	53,231	n.a.	4,829,706	31,310,285
2003	8,179,633	24,602,536	1,508,387	58,940	n.a.	7,229,635	41,579,131
2004	9,792,324	16,072,102	2,202,744	61,895	332,054	5,146,617	33,607,736
2005	11,672,852	15,898,346	2,539,158	57,668	396,686	5,874,447	36,439,157
2006	10,928,866	14,045,961	2,480,827	52,220	411,134	6,236,352	34,155,360
2007	7,609,143	11,566,182	2,218,224	54,230	432,883	4,821,430	26,702,092
2008	5,017,998	7,729,143	1,404,008	42,792	275,808	2,921,821	17,391,570
2009	4,201,057	9,935,678	826,916	26,257	209,055	4,294,528	19,493,491

NOTE: Here and in subsequent tables, except as noted, data include first and junior liens, site-built and manufactured homes, and owner- and non-owner-occupied loans.

1. Consists of requests for preapproval that were denied by the lender or were accepted by the lender but not acted upon by the borrower. In this article, applications are defined as being for a loan on a specific property; they are thus distinct from requests for preapproval, which are not related to a specific property. Information on preapproval requests was not required to be reported before 2004.

n.a. Not available.

the bulk of the reporting entities. For 2009, 8,124 institutions reported on their home-lending activity under HMDA: 3,925 commercial banks; 879 savings institutions (savings and loans and savings banks); 2,017 credit unions; and 1,303 mortgage companies, 914 of which were not affiliated with a banking institution (table 1).⁷ The number of reporting institutions has fluctuated over the years, in part reflecting changes in reporting requirements, including increases in the minimum asset level used to determine coverage.⁸ Changes in the number and geographic footprint of metropolitan areas also influence reporting over time, as HMDA’s coverage focuses on institutions with at least one office in a metropolitan area.⁹ Finally, mergers and acquisitions, along with changes in economic conditions that at times have resulted in more bank failures or new start-ups, have affected the number of reporters. For 2009, the number of reporters fell 3 percent from 2008,

continuing a downward trend since 2006. Independent mortgage companies experienced the largest percentage decline in 2009, falling nearly 14 percent. Since 2006, the number of mortgage companies has fallen by more than one-third.

Reporting lenders submitted information on 15 million applications for home loans of all types in 2009 (excluding requests for preapprovals and purchased loans), up about 6 percent from 2008 but still far below the 27.5 million applications reached in 2006, just before the housing market began unraveling (data derived from table 2.A). The majority of loan applications are approved by lenders, and most of these approvals result in extensions of credit. Some applications are approved, but the applicant decides not to take out the loan; for example, in 2009 nearly 6 percent of all applications were approved but not accepted by the applicant (data not shown in tables). Overall, of the nearly 15 million applications submitted in 2009, 60 percent resulted in an extension of credit (data derived from tables 2.A and 2.B).

The HMDA data also include information on loan purchases by lenders, although the purchased loans may have been originated at any point in time. For 2009, lenders reported information on nearly 4.3 million loans that they had purchased from other institutions, a sharp rebound from the nearly decade-low volume reported in 2008. Finally, lenders reported on roughly 209,000 requests for preapprovals of home-purchase loans that did not result in a loan origination (table 2.A); preapprovals that resulted in a loan are included in the count of loan extensions noted earlier.

7. The data used in this article for the years 1990 to 2007 are based on revised HMDA filings, which include corrections to the initial public release. Consequently, figures for these years may not correspond exactly to figures in tables of earlier articles. The data for 2008 and 2009 reflect the initial public release.

8. For the 2010 reporting year covering the 2009 data, the minimum asset size for purposes of coverage was \$39 million. The minimum asset size changes from year to year with changes in the Consumer Price Index for Urban Wage Earners and Clerical Workers. See the FFIEC’s guide to HMDA reporting at www.ffiec.gov/hmda/guide.htm.

9. From time to time, the Office of Management and Budget updates the list and geographic scope of metropolitan and micropolitan statistical areas. See Office of Management and Budget, “Statistical Programs and Standards,” webpage, www.whitehouse.gov/omb/infoereg_statpolicy.

2. Home loan activity of lending institutions covered under the Home Mortgage Disclosure Act, 2000–09

B. Loans

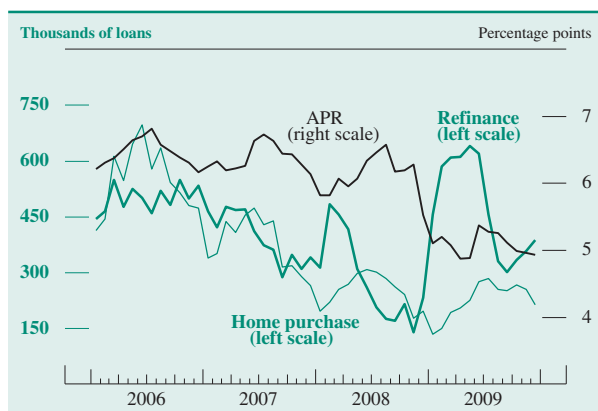
Number

Year	Loans, by type of property				Total
	1–4 family			Multifamily	
	Home purchase	Refinance	Home improvement		
2000	4,787,356	2,435,420	892,587	27,305	8,142,668
2001	4,938,809	7,889,186	828,820	35,557	13,692,372
2002	5,124,767	10,309,971	712,123	41,480	16,188,341
2003	5,596,292	15,124,761	678,507	48,437	21,447,997
2004	6,429,988	7,583,928	966,484	48,150	15,028,550
2005	7,382,012	7,101,649	1,093,191	45,091	15,621,943
2006	6,740,322	6,091,242	1,139,731	39,967	14,011,262
2007	4,663,267	4,817,875	957,912	41,053	10,480,107
2008	3,119,692	3,457,774	568,287	31,509	7,177,262
2009	2,784,956	5,758,875	387,970	19,135	8,950,936

Lending for Home Purchase or Refinancing

A monthly count of home-purchase and refinance loan originations for one- to four-family homes in the HMDA data shows a downward trend in home-

1. Volume of home-purchase and refinance originations and annual percentage rate, by month, 2006–09



NOTE: The data are monthly. Loans are first- and second-lien mortgages excluding multifamily housing. Annual percentage rate (APR) is the average monthly rate for a 30-year fixed-rate mortgage from the Freddie Mac Primary Mortgage Market Survey, as reported by the Federal Financial Institutions Examination Council, www.ffiec.gov/ratespread/newcalc.aspx.

purchase lending from 2006 to 2009 (figure 1).¹⁰ For instance, in June 2006, the peak month for home-

10. Lenders report the date on which action on an application is taken. For originations, the “action taken” date is the closing date or date of loan origination for the loan. This date is the one we use to compile data at the monthly level. To help ensure the anonymity of the data, the dates of application and action taken are not released in the HMDA data files made available to the public.

The estimated annual percentage rates (APRs) in figure 1 are derived from information on contract rates and points from Freddie Mac’s Primary Mortgage Market Survey. Loan counts are aggregated to the monthly level using the date of loan origination, as opposed to the potentially earlier date when the interest rate for the loan was set, which is not reported under HMDA.

purchase lending that year, about 698,000 home-purchase loans were extended, compared with only 308,000 such loans in the peak month of 2008 and 285,000 at the monthly high point for 2009. Overall, the number of home-purchase loans reported by lenders covered by HMDA was down about 11 percent from 2008 and was nearly 60 percent lower than in 2006 (data derived from table 2.B).

The volume of refinance lending tends to be more closely aligned with changes in interest rates than that of home-purchase lending, expanding when mortgage rates fall and retrenching when rates rise. The interest rate environment in 2009 was quite favorable for borrowers, and the number of reported refinance loans increased 67 percent from 2008 to 2009 (table 2.B). However, factors such as elevated unemployment, depressed home prices, and tighter underwriting appear to have hampered refinance activity, as discussed in more detail later.

Non-Owner-Occupied Lending

Individuals buying homes either for investment purposes or as second or vacation homes have been an important segment of the housing market for many years. Under HMDA, housing units used in such ways are collectively described and reported as non-owner occupied.¹¹ Between 2000 and 2005, the share of non-owner-occupied lending used to purchase one- to four-family homes rose, increasing over this period to 16 percent from about 9 percent (data derived from

11. An investment property is a non-owner-occupied dwelling that is intended to be rented or resold for a profit. Some non-owner-occupied units—vacation homes and second homes—are for the primary use of the owners and thus would not be considered investment properties. The HMDA data do not, however, distinguish between these two types of non-owner-occupied dwellings.

3. Home loan applications and home loans for one- to four-family properties, by occupancy status of home and type of loan, 2000–09

Number

Year	Applications				Loans			
	Owner occupied		Non-owner occupied		Owner occupied		Non-owner occupied	
	Conventional	Non-conventional ¹	Conventional	Non-conventional ¹	Conventional	Non-conventional ¹	Conventional	Non-conventional ¹
A. Home purchase								
2000	6,350,643	1,311,101	604,919	12,524	3,411,887	963,345	404,133	8,378
2001	5,776,767	1,268,885	627,598	19,688	3,480,441	1,003,795	440,498	14,128
2002	5,511,048	1,133,770	747,758	13,923	3,967,834	870,599	547,963	8,474
2003	6,212,915	1,014,865	943,248	8,623	4,162,412	761,716	667,613	4,560
2004	7,651,113	799,131	1,335,241	6,839	4,946,423	574,841	906,014	2,710
2005	9,208,214	610,650	1,850,174	3,814	5,742,377	438,419	1,199,509	1,707
2006	8,695,877	576,043	1,653,154	3,792	5,281,485	416,744	1,040,668	1,425
2007	5,960,571	599,637	1,044,112	4,823	3,582,949	423,506	655,916	896
2008	2,940,059	1,424,483	647,340	6,116	1,727,692	972,605	415,930	3,465
2009	1,883,278	1,884,136	427,338	6,305	1,171,033	1,320,412	289,796	3,715
B. Refinance								
2000	6,051,484	110,380	379,299	2,502	2,170,162	64,882	198,695	1,293
2001	12,737,863	705,784	823,748	17,592	6,836,106	524,228	516,616	12,181
2002	15,623,327	742,208	1,111,588	14,504	9,058,654	535,370	706,570	9,377
2003	21,779,329	1,236,467	1,563,430	23,310	13,205,472	895,735	1,007,674	15,871
2004	14,476,350	497,700	1,084,536	13,516	6,649,588	304,591	621,667	8,082
2005	14,494,441	262,438	1,135,929	5,538	6,336,004	158,474	603,914	3,257
2006	12,722,112	208,405	1,112,891	2,553	5,382,950	122,134	585,142	1,016
2007	10,173,282	375,860	1,012,827	4,213	4,123,507	196,897	496,577	894
2008	5,829,633	1,240,472	650,042	8,996	2,593,793	522,243	337,914	3,824
2009	7,251,066	2,051,766	617,707	15,139	4,404,215	998,585	348,599	7,476
C. Home improvement								
2000	1,833,277	91,575	65,286	1,548	843,884	10,896	37,047	760
2001	1,771,472	16,276	60,598	1,143	788,560	6,722	32,990	548
2002	1,459,049	11,582	58,080	636	676,515	4,878	30,533	197
2003	1,430,380	13,876	63,806	325	642,065	5,226	31,113	103
2004	2,081,528	11,887	109,105	224	904,492	5,557	56,341	94
2005	2,401,030	10,053	127,857	218	1,026,340	4,483	62,298	70
2006	2,335,338	12,645	132,694	150	1,067,730	6,115	65,842	44
2007	2,072,688	16,717	128,700	119	887,123	9,409	61,321	59
2008	1,294,162	26,544	83,036	266	516,612	12,347	39,170	158
2009	740,061	28,437	58,171	247	348,409	11,212	28,183	166

1. Loans insured by the Federal Housing Administration or backed by guarantees from the U.S. Department of Veterans Affairs, the Farm Service Agency, or the Rural Housing Service.

table 3, panel A). Since 2005, the share has fallen, dropping to about 11 percent in 2009.

Types of Loans

While the total number of loans to purchase homes has fallen sharply since near the middle of the decade, the volume of nonconventional home-purchase loans—including loans backed by FHA insurance, VA loan guarantees, and, to a lesser extent, Rural Housing Service (RHS) guarantees and guaranteed and direct loans from the Farm Service Agency (FSA)—has increased markedly, particularly since 2007 (table 3, panel A). From 2006 to 2009, the total number of reported home-purchase loans for owner-occupied homes fell 56 percent, while the number of nonconventional home-purchase loans of this sort more than tripled.

Nonconventional lending has also garnered a larger share of the refinance market since 2007, although conventional loans used for refinancing still outnumber nonconventional loans (table 3, panel B). In 2006, there were 44 conventional loans used for the refinancing of loans secured by owner-occupied homes for every nonconventional loan; in 2009, the ratio was 5 to 1. We discuss these developments in more detail in the later section “The Changing Role of Government in the Mortgage Market.”

The sharp increase in nonconventional lending for home purchase relates almost exclusively to site-built homes. In fact, the volume of loans, whether nonconventional or conventional, to purchase manufactured homes has fallen every year since 2006, and such lending represents a small fraction (less than 3 percent in

4. Loans on manufactured homes, by occupancy status of home and type of loan, 2004–09

Number

Year	Owner occupied		Non-owner occupied	
	Conventional	Nonconventional ¹	Conventional	Nonconventional ¹
A. Home purchase				
2004	107,686	23,974	16,243	125
2005	101,539	27,229	17,927	56
2006	102,458	30,530	19,105	257
2007	95,584	28,554	13,963	92
2008	68,821	27,615	11,392	93
2009	43,253	20,558	7,895	29
B. Refinance				
2004	79,838	6,922	6,507	57
2005	73,520	7,727	6,331	26
2006	64,969	11,750	6,240	68
2007	59,591	16,174	6,332	74
2008	44,342	21,926	6,817	177
2009	36,765	21,765	5,922	59
C. Home improvement				
2004	17,119	128	1,269	5
2005	20,239	219	1,372	3
2006	20,886	490	1,425	2
2007	19,428	889	1,494	2
2008	12,621	681	1,324	36
2009	9,710	439	1,110	1

1. See note to table 3.

2009) of total home-purchase lending (data derived from tables 2.B and 4).

Junior-Lien Lending

Information on lien status reported in the HMDA data differentiates among loans secured by a first lien, secured by a subordinate (junior) lien, and not secured. (The latter arises only among home-improvement loans, for which a security interest in a property may or may not be taken). Home equity lines of credit (both first and junior liens) are generally not reported under HMDA. Other junior liens are reported only if they are used for home purchase, home improvement, or a refinancing of a previous loan, which means, in practice, that only junior liens used for home purchase are comprehensively reported in HMDA. In the recent past, one important purpose of home purchase junior-lien loans was to avoid paying for either private mortgage insurance (PMI) or government mortgage insurance when purchasing a home. By taking out a junior-lien loan (often referred to as a “piggyback” loan) to accompany the primary mortgage, homebuyers were able to finance the down payment. In 2006, HMDA reporters extended nearly 1.3 million junior-lien loans for the purpose of buying an owner-occupied home (table 5, panel A). The number of such loans fell by more than one-half in 2007 and fell sharply again in

2008. In 2009, only about 44,000 such loans were extended by HMDA reporters.

Loan Sales

The HMDA data include information on the type of purchaser for loans that are originated and sold during the year. The data are one of the few sources of information that provide a fairly comprehensive record of where loans are placed after origination. Because some loans originated during a calendar year are sold after the end of the year, the HMDA data tend to understate the proportion of originations that are eventually sold, an issue we deal with in more detail in the later section “The Changing Role of Government in the Mortgage Market.”

Regulation C identifies nine types of purchasers that lenders may use when reporting their loan sale activity. Broadly, these purchaser types can be broken into those that are government related—Ginnie Mae, Fannie Mae, Freddie Mac, and Farmer Mac—and those that are not.¹² Ginnie Mae and Farmer Mac are fo-

12. Technically, Ginnie Mae does not buy or sell loans; rather, it guarantees that investors receive timely payment of interest and principal for mortgage-backed securities backed by FHA or VA loans. However, the HMDA rules direct lenders to report loans covered by Ginnie Mae guarantees as sales to Ginnie Mae. (See the Ginnie Mae website at www.ginniemae.gov.) Farmer Mac purchases

5. Home loans for one- to four-family properties, by occupancy status of home, type of loan, and lien status, 2004–09

Number

Year	Owner occupied						Non-owner occupied					
	Conventional			Nonconventional ¹			Conventional			Nonconventional ¹		
	First lien	Junior lien	Unsecured	First lien	Junior lien	Unsecured	First lien	Junior lien	Unsecured	First lien	Junior lien	Unsecured
A. Home purchase												
2004.....	4,209,787	736,636	n.a.	573,606	1,235	n.a.	853,490	52,524	n.a.	2,703	7	n.a.
2005.....	4,520,378	1,221,999	n.a.	437,552	867	n.a.	1,049,555	149,954	n.a.	1,685	22	n.a.
2006.....	4,013,196	1,268,289	n.a.	416,143	601	n.a.	878,325	162,343	n.a.	1,407	18	n.a.
2007.....	3,031,606	551,343	n.a.	422,450	1,056	n.a.	605,714	50,202	n.a.	888	8	n.a.
2008.....	1,636,194	91,498	n.a.	971,528	1,077	n.a.	410,377	5,553	n.a.	3,461	4	n.a.
2009.....	1,128,950	42,083	n.a.	1,318,940	1,472	n.a.	287,760	2,036	n.a.	3,706	9	n.a.
B. Refinance												
2004.....	6,185,418	464,170	n.a.	304,298	293	n.a.	608,956	12,711	n.a.	8,069	13	n.a.
2005.....	5,607,642	728,362	n.a.	158,198	276	n.a.	578,491	25,423	n.a.	3,236	21	n.a.
2006.....	4,347,348	1,035,602	n.a.	121,761	373	n.a.	546,430	38,712	n.a.	989	27	n.a.
2007.....	3,462,944	660,563	n.a.	196,544	353	n.a.	473,336	23,241	n.a.	879	15	n.a.
2008.....	2,374,781	219,012	n.a.	521,863	380	n.a.	328,844	9,070	n.a.	3,814	10	n.a.
2009.....	4,290,072	114,143	n.a.	998,089	496	n.a.	341,852	6,747	n.a.	7,460	16	n.a.
C. Home improvement												
2004.....	357,618	395,582	151,292	2,697	2,243	617	40,028	8,153	8,160	30	54	10
2005.....	409,947	468,375	148,018	2,197	1,873	413	42,544	10,756	8,998	17	49	4
2006.....	360,321	553,152	154,257	3,957	1,735	423	43,913	13,739	8,190	18	20	6
2007.....	301,078	435,187	150,858	7,510	1,579	320	41,670	11,508	8,143	35	18	6
2008.....	179,506	181,402	155,704	10,477	1,610	260	26,482	5,473	7,215	135	13	10
2009.....	165,620	84,332	98,457	8,147	2,416	649	19,598	3,174	5,411	101	29	36

1. See note to table 3.
n.a. Not available.

cused on nonconventional loans (FHA, VA, FSA, and RHS). Fannie Mae and Freddie Mac are focused on conventional loans, within the size limits set by the Congress that meet the underwriting standards established by these entities.

The HMDA data document the importance of the secondary market for home loans. Overall, 82 percent of the first-lien home-purchase and refinance loans for one- to four-family properties originated in 2009 were sold during the year (data not shown in tables).¹³ The share of originations that are sold varies a bit from year to year and by type and purpose of the loan (table 6, panel A). For example, about 70 percent of the conventional loans for the purchase of owner-occupied one- to four-family dwellings that were originated in 2009 were sold that year. In contrast, about 92 percent of the nonconventional loans used to purchase owner-occupied homes were sold in 2009. The share of conventional loans made to non-owner occupants that are

sold is notably smaller than that for owner-occupied loans.

Application Disposition, Loan Pricing, and Status under the Home Ownership and Equity Protection Act

For purposes of analysis, loan applications and loans reported under HMDA can be grouped in many ways. Every loan application reported in 2009 can be organized into 25 distinct product categories characterized by type of loan and property, purpose of the loan, and lien and owner-occupancy status (tables 7.A, 7.B, 8.A, and 8.B). Each product category contains information on the number of total and preapproval applications, application denials, originated loans, loans with prices above the reporting thresholds established by HMDA reporting rules for identifying higher-priced loans, loans covered by the Home Ownership and Equity Protection Act of 1994 (HOEPA), and the mean and median annual percentage rate (APR) spreads for loans reported as higher priced. Table 7.A includes all applications filed prior to October 1, 2009; table 7.B includes applications filed over the remainder of the year. This division corresponds to the change in price-reporting rules noted earlier and discussed in more detail in the later section “The 2009 HMDA Data on

certain types of agriculture-related loans. (See a description of Farmer Mac programs at www.farmermac.com/lenders/fmacprograms/farmermacprograms.aspx.)

13. Loans that are sold in a different calendar year than the year of origination are recorded in the HMDA data as being held in the lender’s portfolio. In some cases, these loans are sold in subsequent years, but those actions are not reported. Also, some loans recorded as sold in the HMDA data are sold to affiliated institutions and thus are not true secondary-market sales. In 2009, 6.5 percent of the loans recorded as sold in the HMDA data were sales to affiliates.

6. Distribution of home loan sales for one- to four-family properties, by occupancy status of home and type of loan, 2000–09

Percent

Year	Owner occupied				Non-owner occupied			
	Conventional		Nonconventional ¹		Conventional		Nonconventional ¹	
	Share sold	MEMO: Share sold to GSEs ²	Share sold	MEMO: Share sold to GSEs ²	Share sold	MEMO: Share sold to GSEs ²	Share sold	MEMO: Share sold to GSEs ²
A. Home purchase								
2000	64.8	31.3	89.1	46.0	53.7	29.3	81.4	22.9
2001	66.8	34.6	86.1	46.2	57.9	34.0	92.2	23.0
2002	71.0	36.7	88.7	43.7	62.5	36.4	87.9	29.7
2003	72.3	33.1	91.2	40.7	63.1	31.8	80.8	21.6
2004	74.2	25.5	92.2	40.5	63.5	23.6	63.7	11.5
2005	75.9	18.7	89.9	32.6	69.7	18.0	49.7	16.3
2006	74.8	19.0	88.6	31.7	69.3	19.0	61.3	15.0
2007	70.1	29.1	87.6	32.5	61.4	26.9	74.9	27.6
2008	71.6	40.1	90.0	36.5	60.3	36.3	95.1	21.6
2009	70.4	39.7	91.7	34.5	57.4	34.1	88.7	35.6
B. Refinance								
2000	47.4	18.0	84.5	50.0	47.3	21.7	86.3	42.8
2001	61.3	37.2	85.0	51.5	61.2	38.4	92.1	33.2
2002	66.8	40.4	85.7	45.0	65.9	43.2	81.3	45.4
2003	74.2	44.8	93.8	48.0	69.8	40.4	87.4	50.7
2004	69.0	27.6	93.2	44.2	62.2	22.6	88.0	35.9
2005	69.9	19.7	89.3	33.5	64.7	16.6	85.7	40.1
2006	65.7	15.2	86.8	31.8	64.9	15.7	79.0	29.6
2007	61.7	21.9	85.1	34.5	61.1	23.9	86.9	23.9
2008	65.3	38.0	88.8	35.4	56.8	33.0	95.7	20.4
2009	79.8	51.7	90.4	36.4	61.8	39.6	93.8	35.9
C. Home improvement								
2000	6.3	1.1	15.6	4.7	4.4	.4	52.9	.5
2001	6.4	1.5	22.3	7.6	3.9	.8	73.7	1.1
2002	5.9	1.4	28.4	7.1	4.0	.9	55.3	3.6
2003	10.5	.8	43.8	6.7	6.5	.7	35.0	3.9
2004	23.6	6.0	48.7	23.5	23.1	7.5	20.2	7.4
2005	27.2	7.0	46.2	25.3	30.2	8.8	27.1	8.6
2006	22.0	5.3	60.4	31.8	29.4	8.9	29.5	15.9
2007	19.1	6.4	70.6	30.8	26.4	12.1	39.0	11.9
2008	14.7	8.7	80.0	49.2	20.0	14.5	74.7	6.3
2009	25.0	17.4	63.8	37.3	18.2	13.3	55.4	9.6

1. See note to table 3.

2. Loans sold to government-sponsored enterprises (GSEs) include those with a purchaser type of Fannie Mae, Freddie Mac, Ginnie Mae, or Farmer Mac.

Loan Pricing.” This change makes it inappropriate to present the pricing information in one consolidated table. Tables 8.A and 8.B provide information on pre-approvals over the corresponding time periods.

Disposition of Applications

As noted, the 2009 HMDA data include information on nearly 15 million loan applications, about 85 percent of which were acted upon by the lender (data derived from combining tables 7.A and 7.B). Patterns of denial rates are largely consistent with what has been observed in earlier years.¹⁴ Denial rates on appli-

cations for home-purchase loans are notably lower than those observed on applications for either refinance or home-improvement loans. Denial rates on applications backed by manufactured housing are much higher than those on applications backed by

14. The information provided in the tables is identical to that provided in analyses of earlier years of HMDA data except for the division of the data by the date of application. Comparisons of the numbers in these two tables with those in the tables from earlier

years, including denial rates, can be made by consulting the following articles: Robert B. Avery, Neil Bhutta, Kenneth P. Brevoort, Glenn B. Canner, and Christa N. Gibbs (2010), “The 2008 HMDA Data: The Mortgage Market during a Turbulent Year,” *Federal Reserve Bulletin*, vol. 95, pp. A169–A211; Robert B. Avery, Kenneth P. Brevoort, and Glenn B. Canner (2008), “The 2007 HMDA Data,” *Federal Reserve Bulletin*, vol. 94, pp. A107–A146; Robert B. Avery, Kenneth P. Brevoort, and Glenn B. Canner (2007), “The 2006 HMDA Data,” *Federal Reserve Bulletin*, vol. 93, pp. A73–A109; Robert B. Avery, Kenneth P. Brevoort, and Glenn B. Canner (2006), “Higher-Priced Home Lending and the 2005 HMDA Data,” *Federal Reserve Bulletin*, vol. 92, pp. A123–A166; and Robert B. Avery, Glenn B. Canner, and Robert E. Cook (2005), “New Information Reported under HMDA and Its Application in Fair Lending Enforcement,” *Federal Reserve Bulletin*, vol. 91, pp. 344–94.

site-built homes. For example, the denial rate for first-lien conventional home-purchase loan applications for owner-occupied site-built properties was 15.7 percent in 2009, compared with a denial rate of 59.0 percent for first-lien conventional home-purchase loan applications for owner-occupied manufactured homes (data derived from tables 7.A and 7.B).

In addition to the application data provided under HMDA, nearly 560,000 requests for preapproval were reported under HMDA as acted on by the lender (data derived from tables 8.A and 8.B). About one-fourth of these requests for preapproval were denied by the lender. Not surprisingly, the number of requests for preapproval is down substantially from the levels recorded at the height of the housing boom. In 2006, covered institutions reported that they received nearly 1.2 million requests for preapproval upon which they took action (data not shown in tables).

Loan Pricing

The collapse of the subprime and near-prime credit markets in 2007 resulted in a sharp curtailment of lending at relatively high interest rates, a market outcome reflected in the 2007 and 2008 HMDA data, which show a marked decline in the number of loans that were classified for purposes of reporting as higher priced. A review of the 2008 HMDA data also revealed that a substantial fraction of loans extended in 2008 that were reported as higher priced were so classified because of atypical changes in the interest rate environment rather than because the loans represented relatively high credit risk.¹⁵

The 2009 HMDA data continue to show that the level of higher-priced lending is greatly diminished from the levels reached in 2006. The data also show that the incidence of higher-priced lending across all products in 2009 (about 5.5 percent; data derived from tables 7.A and 7.B) is not only much lower than the 28.7 percent rate found in 2006 (2006 data not shown in tables) but also about one-half of the 11.6 percent rate found in 2008 (2008 data not shown in tables). The loan pricing information within the HMDA data is explored more fully in the later section “The 2009 HMDA Data on Loan Pricing.”

HOEPA Loans

The HMDA data indicate which loans are covered by the protections afforded by HOEPA. Under HOEPA, certain types of mortgage loans that have interest rates

or fees above specified levels require additional disclosures to consumers and are subject to various restrictions on loan terms.¹⁶ For 2009, 1,153 lenders reported extending 6,500 loans covered by HOEPA (tables 7.A and 7.B). In comparison, lenders reported on about 8,600 loans covered by HOEPA in 2008 (data regarding lenders not shown in tables). In the aggregate, HOEPA-related lending made up less than 0.1 percent of all the originations of home-secured refinancing loans and home-improvement loans reported for 2009 (data derived from tables).¹⁷

THE 2009 HMDA DATA ON LOAN PRICING

As noted, the rules governing whether or not a loan is classified as higher priced under HMDA were changed in 2008, with implementation affecting loan classifications for the 2009 data. The purpose of the rule change was to address concerns that had arisen about the distortive effects of changes in the interest rate environment on the reporting of higher-priced lending under the original methodology.¹⁸ Because of changes in underlying market rates of interest, two loans of equivalent credit or prepayment risk could be classified differently at different points in time, an outcome that was unintended.

The rules for reporting loan pricing information under HMDA were originally adopted in 2002, covering lending beginning in 2004. Under these rules (the “old rules”), lenders were required to compare the APR on a loan to the yield on a Treasury security with a comparable term to maturity to determine whether the loan should be considered higher priced: If the difference exceeded 3 percentage points for a first-lien loan or 5 percentage points for a junior-lien loan, the loan was classified as higher priced and the rate spread (the amount of the difference) was reported.

Analysis of the HMDA data revealed that the original loan pricing classification methodology created unintended distortions in reporting. Since most mortgages prepay well before the stated term of the loan, lenders typically use relatively shorter-term interest rates when setting the price of mortgage loans. For example, lenders often price 30-year fixed-rate mort-

16. The requirement to report HOEPA loans in the HMDA data relates to whether the loan is subject to the original protections of HOEPA, as determined by the coverage test in the Federal Reserve Board’s Regulation Z, 12 C.F.R. pt. 226.32(a). The required reporting is not triggered by the more recently adopted protections for “higher-priced mortgage loans” under Regulation Z, notwithstanding that those protections were adopted under authority given to the Board by HOEPA. See 73 Fed. Reg. 44522 (July 30, 2008).

17. HOEPA does not apply to home-purchase loans.

18. The potential for such distortions is discussed in prior research; for example, see Avery, Brevoort, and Canner, “Higher-Priced Home Lending and the 2005 HMDA Data,” in note 14.

15. See Avery and others, “The 2008 HMDA Data: The Mortgage Market during a Turbulent Year,” in note 14.

7. Disposition of applications for home loans, and origination and pricing of loans, by type of home and type of loan, 2009

A. Loans with application dates before October 1, 2009, threshold change

Type of home and loan	Applications				Loans originated										
	Number submitted	Acted upon by lender			Number	Loans with APR spread above the threshold ¹									Number of HOEPA-covered loans ²
		Number	Number denied	Percent denied		Number	Percent	Distribution, by percentage points of APR spread					APR spread (percentage points)		
								3-3.99	4-4.99	5-6.99	7-8.99	9 or more	Mean	Median	
1-4 FAMILY															
NONBUSINESS RELATED³															
<i>Owner occupied</i>															
<i>Site built</i>															
<i>Home purchase</i>															
Conventional															
First lien	1,415,449	1,229,153	189,822	15.4	944,844	45,160	4.8	47.9	23.4	24.0	3.8	.9	4.4	4.1	...
Junior lien	51,521	45,929	7,302	15.9	34,828	7,063	20.3	...	...	91.8	7.1	1.2	5.9	5.7	...
Government backed															
First lien	1,588,919	1,403,515	208,478	14.9	1,125,063	56,504	5.0	88.5	7.6	3.7	.1	.1	3.5	3.3	...
Junior lien	1,581	1,379	98	7.1	1,247	4	.3	...	...	50.0	25.0	25.0	8.3	6.4	...
<i>Refinance</i>															
Conventional															
First lien	6,218,103	5,309,600	1,144,080	21.5	3,806,948	120,408	3.2	48.9	21.3	20.0	9.0	.8	4.5	4.0	1,885
Junior lien	166,847	148,366	44,552	30.0	95,851	20,522	21.4	...	...	79.3	15.2	5.5	6.3	5.9	397
Government backed															
First lien	1,757,425	1,381,014	425,250	30.8	854,630	61,060	7.1	92.6	5.5	1.8	.1	.0	3.4	3.2	284
Junior lien	813	607	149	24.5	420	7	1.7	...	...	71.4	28.6	.0	6.1	5.4	...
<i>Home improvement</i>															
Conventional															
First lien	267,265	227,387	70,564	31.0	142,781	28,122	19.7	37.0	25.2	24.3	11.7	1.9	4.9	4.5	840
Junior lien	164,257	140,543	62,187	44.2	71,000	12,010	16.9	...	...	73.6	17.8	8.5	6.6	6.0	465
Government backed															
First lien	16,073	12,716	4,817	37.9	6,868	818	11.9	70.4	10.4	14.2	5.0	.0	4.0	3.4	5
Junior lien	5,171	4,447	1,783	40.1	2,103	1,659	78.9	...	...	32.5	51.8	15.7	7.6	7.5	12
<i>Unsecured (conventional or government backed)</i>															
	181,904	177,263	78,924	44.5	77,557	...	...	...	...	...	...	...	...	...	...
<i>Manufactured</i>															
<i>Conventional, first lien</i>															
Home purchase	166,420	159,732	92,937	58.2	37,065	28,261	76.2	15.6	18.3	34.2	17.7	14.2	6.4	5.9	...
Refinance	70,219	60,693	23,879	39.3	31,150	15,956	51.2	17.0	17.7	36.2	24.0	5.1	6.0	5.8	1,298
Other	108,369	95,393	36,314	38.1	48,872	9,719	19.9	44.1	15.5	26.1	10.5	3.8	5.0	4.3	449
<i>Non-owner occupied⁴</i>															
<i>Conventional, first lien</i>															
Home purchase	338,882	297,621	53,181	17.9	221,421	19,405	8.8	56.5	21.7	16.2	3.9	1.6	4.3	3.8	...
Refinance	504,929	426,480	123,753	29.0	275,839	14,449	5.2	49.1	21.6	22.7	5.2	1.4	4.5	4.0	105
Other	72,823	62,448	23,500	37.6	36,035	4,466	12.4	25.4	14.8	44.1	12.0	3.7	5.5	5.4	54
BUSINESS RELATED³															
<i>Conventional, first lien</i>															
Home purchase	30,659	29,666	1,095	3.7	27,915	1,152	4.1	30.1	31.7	31.6	4.7	1.9	4.9	4.6	...
Refinance	31,974	30,888	1,828	5.9	28,455	1,064	3.7	32.0	30.6	33.0	4.0	.6	4.8	4.6	6
Other	14,483	12,435	1,604	12.9	10,516	419	4.0	49.2	13.8	28.6	5.7	2.6	4.7	4.0	9
MULTIFAMILY⁵															
<i>Conventional, first lien</i>															
Home purchase	7,161	6,504	956	14.7	5,229	215	4.1	47.0	31.6	18.1	2.3	.9	4.3	4.1	...
Refinance	12,067	11,118	1,886	17.0	8,704	449	5.2	48.3	29.8	19.2	2.5	.2	4.3	4.0	...
Other	4,085	3,683	573	15.6	2,994	114	3.8	43.0	23.7	29.8	3.5	.0	4.4	4.0	1
Total	13,197,399	11,278,580	2,599,512	23.0	7,898,335	449,006	5.7	51.2	15.5	23.3	7.7	2.3	4.6	3.9	5,810

1. Annual percentage rate (APR) spread is the difference between the APR on the loan and the yield on a comparable-maturity Treasury security. The threshold for first-lien loans is a spread of 3 percentage points; for junior-lien loans, it is a spread of 5 percentage points.

2. Loans covered by the Home Ownership and Equity Protection Act of 1994 (HOEPA), which does not apply to home-purchase loans.

3. Business-related applications and loans are those for which the lender reported that the race, ethnicity, and sex of the applicant or co-applicant are "not applicable"; all other applications and loans are nonbusiness related.

4. Includes applications and loans for which occupancy status was missing.

5. Includes business-related and nonbusiness-related applications and loans for owner-occupied and non-owner-occupied properties.

... Not applicable.

gages based on the yields on securities with maturities of fewer than 10 years, and they typically set interest rates on adjustable-rate mortgages (ARMs) based on

the yields on securities with much shorter terms. Thus, a change in the relationship between shorter- and longer-term yields affected the reported incidence of

7. Disposition of applications for home loans, and origination and pricing of loans, by type of home and type of loan, 2009

B. Loans with application dates on or after October 1, 2009, threshold change

Type of home and loan	Applications				Loans originated											
	Number submitted	Acted upon by lender			Number	Loans with APR spread above the threshold ¹										Number of HOEPA-covered loans ²
		Number	Number denied	Percent denied		Number	Percent	Distribution, by percentage points of APR spread						APR spread (percentage points)		
								1.5-1.99	2-2.49	2.5-2.99	3-3.99	4-4.99	5 or more	Mean	Median	
1-4 FAMILY																
NONBUSINESS RELATED³																
<i>Owner occupied</i>																
<i>Site built</i>																
<i>Home purchase</i>																
<i>Conventional</i>																
First lien	202,357	178,384	31,573	17.7	139,640	4,867	3.5	37.9	22.6	16.5	14.1	4.7	4.2	2.6	2.2	...
Junior lien	9,810	8,879	1,575	17.7	6,887	1,058	15.4	...	...	...	33.7	53.6	12.7	4.8	4.2	...
<i>Government backed</i>																
First lien	239,838	214,617	37,866	17.6	170,716	2,447	1.4	78.6	11.4	4.3	.8	.3	4.7	2.0	1.7	...
Junior lien	266	226	26	11.5	194	5	2.6	...	...	...	40.0	60.0	.0	4.2	4.3	...
<i>Refinance</i>																
<i>Conventional</i>																
First lien	747,592	630,921	158,935	25.2	442,401	9,982	2.3	32.7	19.6	13.6	15.3	6.7	12.1	3.0	2.4	188
Junior lien	27,587	25,102	8,773	34.9	15,242	1,589	10.4	...	...	...	30.7	37.3	32.1	4.9	4.4	63
<i>Government backed</i>																
First lien	244,580	192,941	62,850	32.6	120,499	3,938	3.3	38.3	39.5	14.1	5.6	1.2	1.3	2.2	2.1	26
Junior lien	110	87	21	24.1	64	4	6.3	...	...	...	100.0	.0	.0	3.6	3.6	4
<i>Home improvement</i>																
<i>Conventional</i>																
First lien	37,213	32,246	12,870	39.9	17,868	3,026	16.9	24.3	19.6	15.9	16.5	7.6	16.1	3.3	2.7	111
Junior lien	31,575	28,179	14,818	52.6	12,283	1,052	8.6	...	...	...	30.4	29.3	40.3	5.4	4.6	48
<i>Government backed</i>																
First lien	2,120	1,507	558	37.0	868	149	17.2	20.1	36.2	14.1	5.4	16.1	8.1	2.9	2.4	1
Junior lien	1,898	1,597	1,234	77.3	306	235	76.8	...	...	...	3.4	18.3	78.3	6.3	6.6	0
<i>Unsecured (conventional or government backed)</i>																
.....	35,729	34,787	16,783	48.2	17,100	...	...	...	...	...	...	...	...	...	...	...
<i>Manufactured</i>																
<i>Conventional, first lien</i>																
Home purchase	34,721	33,794	21,150	62.6	5,856	4,358	74.4	5.8	5.8	8.4	21.5	19.0	39.6	4.9	4.4	...
Refinance	9,928	8,994	4,100	45.6	4,367	2,023	46.3	12.5	11.1	15.0	24.2	15.8	21.5	3.9	3.5	180
Other	14,052	12,238	5,812	47.5	5,065	870	17.2	20.9	15.2	12.1	23.0	9.1	19.8	3.8	3.1	56
<i>Non-owner occupied⁴</i>																
<i>Conventional, first lien</i>																
Home purchase	51,440	45,689	8,571	18.8	35,126	1,928	5.5	37.6	19.4	14.3	16.1	6.5	6.2	2.7	2.3	...
Refinance	71,950	59,462	19,284	32.4	37,897	1,584	4.2	36.1	21.3	15.7	14.5	6.1	6.3	2.7	2.3	11
Other	13,935	12,273	5,357	43.6	6,545	515	7.9	18.1	13.0	12.6	23.3	15.5	17.5	3.6	3.2	4
BUSINESS RELATED³																
<i>Conventional, first lien</i>																
Home purchase	5,251	5,120	217	4.2	4,843	188	3.9	19.7	30.3	21.8	20.7	3.2	4.3	2.7	2.5	...
Refinance	5,328	5,195	291	5.6	4,867	216	4.4	25.9	27.3	21.3	16.7	6.0	2.8	2.6	2.4	0
Other	2,285	2,093	307	14.7	1,759	27	1.5	11.1	33.3	11.1	18.5	14.8	11.1	3.2	2.7	0
MULTIFAMILY⁵																
<i>Conventional, first lien</i>																
Home purchase	985	910	151	16.6	733	57	7.8	49.1	22.8	12.3	12.3	1.8	1.8	2.3	2.0	...
Refinance	1,425	1,336	228	17.1	1,073	64	6.0	23.4	40.6	15.6	10.9	1.6	7.8	2.6	2.2	0
Other	534	515	105	20.4	402	5	1.2	40.0	20.0	.0	40.0	.0	.0	2.4	2.1	0
Total	1,792,509	1,537,092	413,455	26.9	1,052,601	40,187	3.8	28.7	17.7	11.9	16.2	10.6	14.9	3.3	2.6	692

NOTE: See notes to table 7.A.

higher-priced lending. For example, when short-term interest rates fell relative to long-term rates, the number and proportion of loans reported as higher priced fell even when other factors, such as lenders' underwriting practices or borrowers' credit risk or prepayment characteristics, remained unchanged.

For ARMs, this effect was further exacerbated by the manner in which APRs are calculated. The interest rates on most ARM loans, after the initial interest rate reset date, are set based on the interest rate for one-year securities. As a result, the APRs for ARMs, which take into account the expected interest rates on a loan

8. Home-purchase lending that began with a request for preapproval: Disposition and pricing, by type of home, 2009

A. Loans with application dates before October 1, 2009, threshold change

Type of home	Requests for preapproval			Applications preceded by requests for preapproval ¹			Loan originations whose applications were preceded by requests for preapproval										
	Number acted upon by lender	Number denied	Percent denied	Number submitted	Acted upon by lender		Number	Loans with APR spread above the threshold ²									
					Number	Number denied		Number	Percent	Distribution, by percentage points of APR spread					APR spread (percentage points)		
										3-3.99	4-4.99	5-6.99	7-8.99	9 or more	Mean spread	Median spread	
1-4 FAMILY NONBUSINESS RELATED³																	
<i>Owner occupied</i>																	
<i>Site built</i>																	
<i>Conventional</i>																	
First lien	264,145	70,550	26.7	154,432	23,986	17,069	104,841	2,303	2.2	66.4	19.8	11.5	2.0	.4	3.9	3.5	
Junior lien	5,928	1,075	18.1	4,134	309	127	3,486	922	26.4	...	...	93.8	5.5	.7	5.9	5.8
<i>Government backed</i>																	
First lien	184,995	47,817	25.8	124,553	12,744	10,544	96,314	4,789	5.0	85.6	10.5	3.6	.2	.1	3.6	3.3	
Junior lien	114	12	10.5	96	14	15	65	1	1.5	...	...	100.0	.0	.0	5.0	5.0
<i>Manufactured</i>																	
<i>Conventional, first lien</i>	5,618	1,400	24.9	3,829	361	918	2,117	1,340	63.3	14.4	19.9	24.8	14.9	26.1	7.5	6.2	
Other	2,733	709	25.9	1,969	606	266	1,006	93	9.2	85.0	12.9	2.0	.0	.0	3.5	3.4	
<i>Non-owner occupied⁴</i>																	
<i>Conventional, first lien</i>	33,198	8,109	24.4	21,047	3,020	2,057	14,767	800	5.4	62.3	21.6	12.6	2.3	1.3	4.1	3.7	
Other	1,646	216	13.1	1,393	179	136	1,064	14	1.3	14.3	.0	95.7	.0	.0	5.4	5.5	
BUSINESS RELATED³																	
<i>Conventional, first lien</i>	573	13	2.3	550	59	85	385	36	9.4	33.3	30.6	33.3	2.8	.0	4.8	4.5	
Other	123	8	6.5	114	14	21	74	2	2.7	100.0	.0	.0	.0	.0	3.3	3.3	
MULTIFAMILY⁵																	
<i>Conventional, first lien</i>	98	6	6.1	85	15	4	63	6	9.5	50.0	33.3	16.7	.0	.0	4.1	4.1	
Other	35	0	.0	33	13	4	16	2	12.5	50.0	50.0	.0	.0	.0	4.0	4.0	
Total	499,206	129,915	26.0	312,235	41,320	31,246	224,198	10,308	4.6	62.3	13.8	17.1	3.1	3.7	4.4	3.6	

1. These applications are included in the total reported in table 7.A.
2. See table 7.A, note 1.
3. See table 7.A, note 3.
4. See table 7.A, note 4.
5. See table 7.A, note 5.
- ... Not applicable.

assuming that the loan does not prepay and that the index rates used to establish interest rates after the reset do not change, will be particularly sensitive to changes in one-year interest rates. Consequently, the share of ARMs reported as higher priced fell when one-year rates declined relative to other rates even if the relationship between long- and intermediate-term rates remained constant.

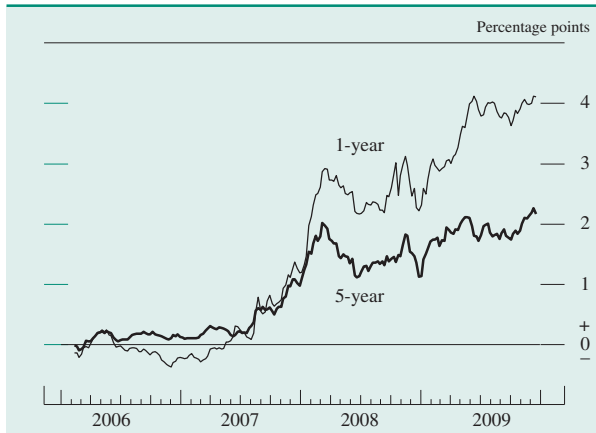
To address these distortions, the price-reporting rules under HMDA were modified (the “new rules”). For applications taken beginning October 1, 2009 (and for all loans that close on or after January 1, 2010), lenders compare the APR on the loan with the estimated APR (termed the “average prime offer rate” (APOR)) that a high-quality prime borrower would receive on a loan of a similar type (for example, a 30-year fixed-rate mortgage). The APOR is estimated using the interest rates and points (and margin for ARMs) reported by Freddie Mac in its Primary Mortgage Market Survey

(PMMS).¹⁹ If the difference is more than 1.5 percentage points for a first-lien loan or more than 3.5 percentage points for a junior-lien loan, then the loan is classified as higher priced and the rate spread is reported.²⁰ Since APORs move with changes in market rates and are product specific, it is anticipated that the distortions that existed under the old rules will be greatly reduced.

19. The weekly Freddie Mac Primary Mortgage Market Survey reports the average contract rates and points for all loans and the margin for adjustable-rate loans offered to prime borrowers (those that pose the lowest credit risk). The survey currently reports information for two fixed-rate mortgage products (30-year and 15-year terms) and two ARM products (1-year adjustable rate and 5-year adjustable rate). See Freddie Mac, “Weekly Primary Mortgage Market Survey,” webpage, www.freddiemac.com/dlink/html/PMMS/display/PMMSOutputYr.jsp.

20. For more details, see Federal Financial Institutions Examination Council, “FFIEC Rate Spread Calculator,” webpage, www.ffiec.gov/ratespread/default.aspx.

2. Spreads on Treasury bonds, 2006–09

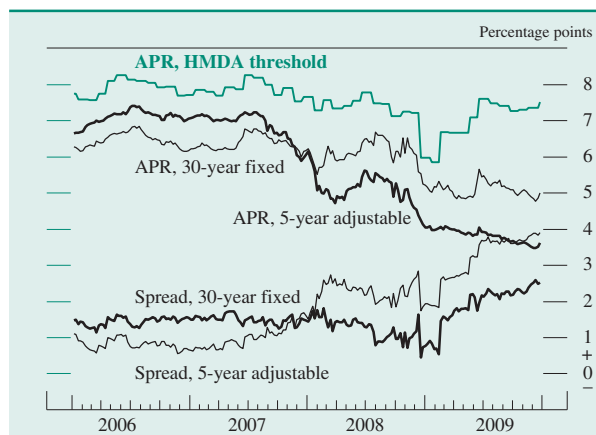


NOTE: The data are weekly, and the spreads are over 30-year Treasury bonds. Prior to mid-February 2006, the 30-year Treasury bond was not available, and the data are missing.

SOURCE: Federal Reserve Board, Statistical Release H.15, www.federalreserve.gov/releases/h15/current/h15.htm.

In 2008, the decrease in the incidence of higher-priced lending that would be expected to follow a steepening yield curve was mitigated by the “flight to quality” and liquidity concerns that were caused by the financial crisis in late 2008. This development resulted in the yields on Treasury securities falling relative to rates on other securities, including mortgage loans. As a result, the spread between the HMDA reporting threshold and the APR on a 30-year fixed-rate prime loan, based on the rates reported by Freddie Mac’s PMMS, fell during most of 2008 (figure 3). This pattern carried into 2009 but began to reverse itself early in the year,

3. HMDA price-reporting threshold, interest rates for fixed- and adjustable-rate loans, and spreads between the threshold and such rates, 2006–09



NOTE: For explanation of Home Mortgage Disclosure Act (HMDA) price-reporting threshold, see text. The threshold and annual percentage rates (APRs) are for conventional first-lien 30-year prime loans.

SOURCE: APRs from the Freddie Mac Primary Mortgage Market Survey; see note to figure 1.

and by midyear the spreads between the HMDA reporting threshold and the APRs on the 30-year fixed-rate and 5-year ARM from the PMMS had increased to levels well above those observed in the previous three years.

The historically high spreads between mortgage rates for prime-quality borrowers (reflected by the APRs calculated from the PMMS) and the HMDA reporting threshold imply that the incidence of higher-priced lending in 2009 would be below the levels for earlier years, even if high-risk lending activity had remained the same. Furthermore, the increasing spreads over 2009 suggest that loans of a given credit risk that may have been reported as higher priced earlier in the year may not have been so reported later in the year. This possibility makes drawing inferences about changes in high-credit-risk lending based upon changes in the incidence of reported higher-priced lending much more complicated.

In analyzing HMDA data from previous years in which the yield curve changed substantially, we relied on a methodology that used a different definition of a “higher-priced loan” that is less sensitive to yield curve changes and, therefore, more fully reflective of high-risk lending activity. This methodology defines the credit risk component of a loan as the difference between the APR on that loan and the APR available to the lowest-risk prime borrowers at that time. This credit risk component is assumed to be constant over time. In other words, we assume that a nonprime borrower who received a loan with an APR that was 1.25 percentage points above the APR available to prime borrowers at that time would receive, if the nonprime borrower’s characteristics remained constant, a loan that was 1.25 percentage points above the available rate for prime borrowers at all other times, regardless of any changes in the interest rate environment. We then examine the share of loans with credit risk components that are above specific thresholds. The approach of creating a threshold that is set relative to the mortgage rates that are available to prime-quality borrowers is similar to the new HMDA reporting rules and should provide a more accurate depiction of the extent to which high-risk lending has changed; for instance, the lending data under the new rules are relatively free of the distortions introduced in the incidence of reported higher-priced lending by changes in the interest rate environment.

In estimating the credit risk component of loans in the HMDA data, we use, as the measure of the rate available to prime borrowers, the APR derived from the information reported in the Freddie Mac PMMS

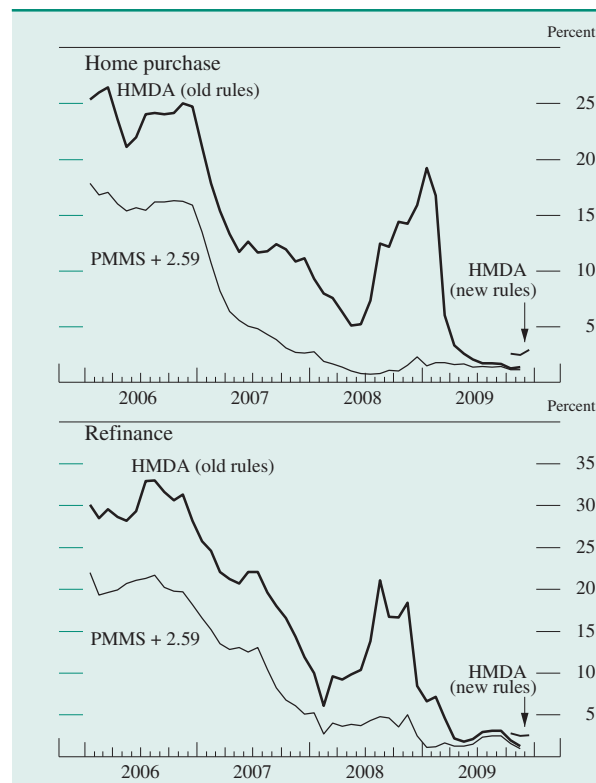
for a 30-year fixed-rate loan.²² As an approximation of the APR on loans in the HMDA data, we add the reported spread (for higher-priced loans) to the appropriate HMDA reporting threshold for a 30-year loan. We refer to the resulting estimate of the credit risk component as the “PMMS spread.” Because of the large spreads in 2009 between the HMDA reporting threshold and the APRs on prime-quality 30-year fixed-rate loans, only those loans with a PMMS spread in excess of 2.59 percentage points would have been reported as higher priced under HMDA at all points during 2009. Therefore, this spread is the minimum PMMS spread that can be used as a threshold. We refer to loans with a PMMS spread of 2.59 percentage points or higher as “adjusted higher priced” loans.

The share of loans reported as higher priced under the old HMDA reporting rules in 2009 (taken as a whole) was low. Among first-lien loans secured by one-to-four-family properties, 4.7 percent were higher priced in 2009, down significantly from the historic high point of 27.2 percent in 2006 and from 10.7 percent in 2008. The decline in the incidence of higher-priced lending was observed for all types of lenders.

Looking exclusively at changes in the annual rates of higher-priced lending can obscure the information about how the mortgage market is developing over time. To better illustrate how changes in higher-priced lending have played out in recent years, we examined monthly patterns in higher-priced lending activity. The monthly data show that the incidence of reported higher-priced home-purchase lending fell over the course of 2009 (figure 4, top panel; see line labeled “HMDA (old rules)”). A similar decline is observed for refinance loans, though the incidence of reported higher-priced refinance lending ticked up slightly in the latter portion of the year (figure 4, bottom panel).

As discussed, this decline in reported higher-priced lending is expected given the increasing spread between mortgage rates and the HMDA reporting threshold. Using our methodology to correct for distortions caused by changes in the interest rate environment, we find that the share of adjusted higher-priced loans (shown in figure 4) was relatively flat for home-purchase lending in 2009, suggesting that the decline in the incidence of reported higher-priced lending in the HMDA data for that period largely reflected changes

4. Higher-priced share of lending, by annual percentage rate threshold, 2006–09



NOTE: The data are monthly. Loans are first-lien mortgages for site-built properties and exclude business loans. Annual percentage rates are for conventional 30-year fixed-rate prime mortgages. For explanations of old and new pricing rules, see text.

PMMS Freddie Mac Primary Mortgage Market Survey.
HMDA Home Mortgage Disclosure Act.

in the interest rate environment. The share of refinance loans that were considered adjusted higher priced in 2009 also remained at historically low levels. The small increase observed in the incidence of higher-priced lending in 2009 appears to reflect an actual increase in high-risk lending, though the increase was small and short lived. These figures suggest that lending to higher-risk borrowers, which declined sharply beginning in 2007, remained at low levels during the year, with little indication that lending to such borrowers has begun to rebound. However, it is important to note that the PMMS spread that we use in this analysis is significantly higher than the PMMS spreads we have employed in previous years, and this threshold may not capture a considerable share of lending to high-risk borrowers.

The New Price Reporting Rules

The new price reporting rules, which apply to loans originated during 2009 with application dates from October to December, use reporting thresholds that

22. By using the APR for the 30-year fixed-rate mortgage, we are implicitly treating all loans in the HMDA data as though they were 30-year fixed-rate loans. Data from large mortgage servicers provided by Lender Processing Services, Inc., show that less than 1 percent of first-lien mortgages in 2009 were ARMs. Because of the rarity of ARMs and the prevalence of 30-year loans, we do not expect our assumption to substantially distort the analysis.

are based on the prevailing mortgage interest rates at the time a loan's interest rate is locked. The threshold is similar to the one used earlier to adjust for changes in the interest rate environment, though it has two major advantages over our measure. First, the new-rule threshold varies with the initial period over which a loan's interest rate does not change, which means that the reporting threshold for ARMs can be set lower (or higher) than the threshold for 30-year fixed-rate loans. In the preceding analysis, because we could not distinguish fixed-rate from ARM loans (or between types of ARMs), we had to assume that all loans originated during 2009 were fixed rate. Analyses of the data reported using the new rules do not need to rely on such an assumption. The second advantage is that because lenders know the APR on the loan when comparing it with the threshold, whereas we could only approximate a loan's APR when it was reported as higher priced under the old rules, the reporting threshold is not constrained by the maximum PMMS spread that was in effect over the period being examined. Consequently, the spread that governs reporting is lower than we could use in our attempt to correct the old reporting rules for changes in the interest rate environment. The result should be a more accurate depiction of subprime lending activity that is less sensitive to changes in the interest rate environment.

As discussed, the new rules applied only to a fraction of originated loans reported during the year. The new rules applied to less than 15 percent of loans originated in October, 62 percent of those originated in November, and 85 percent of those originated in December (data not shown in tables). The shares of these loans that were reported as higher priced during this period are shown in the two panels of figure 4. The higher incidences observed under the new reporting rules primarily appear to reflect the large spreads in effect during 2009 between mortgage rates for prime borrowers and the old HMDA reporting threshold that reduced reporting under the old rules. Beyond that, it is difficult to compare the two numbers, as they are spreads relative to two different thresholds. Since we observe the incidences for such a short period, we are unable to make any inferences about the volume of subprime lending activity other than that it seems to have been relatively stable over this three-month period. However, beginning with the 2010 HMDA data, when the new reporting rules will apply to all originated loans, we expect these rules to provide a more accurate and consistent depiction of lending activity to high-risk borrowers.

THE CHANGING ROLE OF GOVERNMENT IN THE MORTGAGE MARKET

The share of new mortgage loans either explicitly or implicitly guaranteed by the federal government has risen dramatically since 2006. We estimate that by the end of 2009, almost 6 out of 10 new owner-occupied home-purchase loans were originated through the FHA, VA, and, to a much lesser extent, the FSA or RHS programs, with a similar percentage of new refinance mortgages either owned outright or in mortgage pools guaranteed by Fannie Mae or Freddie Mac. This section will discuss the underlying causes of this trend. To facilitate our analysis, we employ a revised data set designed to correct for one of the limitations in the HMDA reporting system.

Under HMDA reporting rules, all loans originated under the FHA, VA, FSA, or RHS programs must be identified as such.²³ However, loans placed in pools that are guaranteed by or sold to the housing-related government-sponsored enterprises, Fannie Mae and Freddie Mac, are identified only if they are sold directly to the GSEs or directly placed in a pool during the same year of the loan origination. The HMDA data therefore tend to undercount loans sold to the GSEs for two reasons. First, sales can take place in a year subsequent to origination, especially among loans originated during the fourth quarter. Second, lenders may not sell loans directly to the GSEs but instead may sell them to other financial institutions that form mortgage pools for which investors subsequently obtain GSE credit guarantees.

For the analysis in this section, we adjust the HMDA data to attempt to correct for the undercount of GSE loans. First, financial institutions are required to report under HMDA their loan purchases as well as their originations. Using information on loan size, location, date of origination, and date of purchase, we were able to match more than 50 percent of the loans that were originated from 2006 to 2009 and then sold to another financial institution to the record for the same loan in the loan purchase file. From those matched, we are then able to obtain the ultimate loan disposition from the filing of loan purchases. Of the portion we were unable to match, most were originated (and purchased) by one large organization, which supplied us with the aggregate disposition of the purchased loans. For those sold loans that we were still unable to match, we as-

23. For the 2009 reporting year, 77.3 percent of the nonconventional home-purchase loans were FHA loans, 13.9 percent were VA guaranteed, and 8.8 percent were covered under the FSA or RHS programs. For nonconventional refinance loans, 83.7 percent were FHA, 15.9 percent VA, and 0.4 percent FSA or RHS.

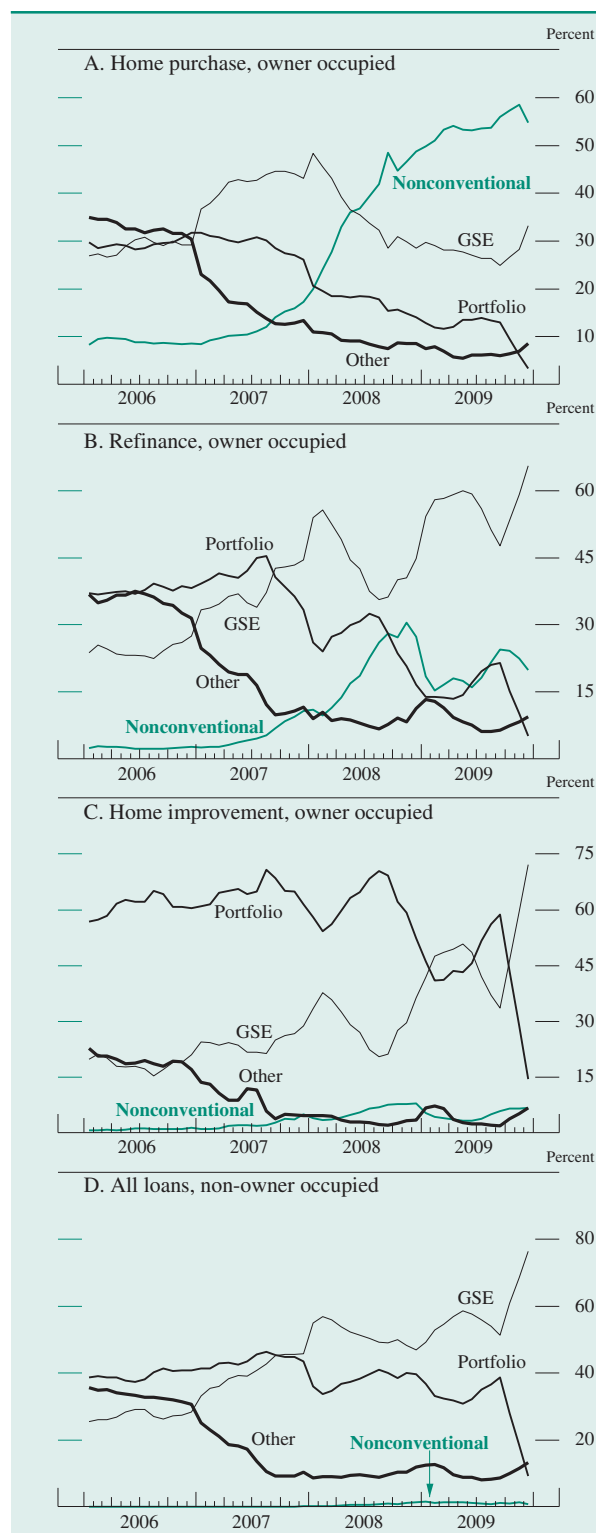
sumed that the distribution of the ultimate disposition matched the distribution of loans that we could match.

Second, to address the undercount of GSE loans originated in October through December of each year, we used an imputation formula based on the allocation of loans originated in the preceding September and the following January to assign the ultimate disposition of conventional loans.²⁴ The imputation was conducted separately for the 14 largest mortgage originators and took account of the characteristics of the loan, including size and location.

The changing structure of the mortgage market between 2006 and 2009 may be illustrated using our adjusted data for the four major loan types reported under HMDA (figure 5). The figure groups first-lien site-built mortgages into four distinct categories: (1) loans insured by the FHA, backed by the VA, or issued or guaranteed by the FSA or RHS (“nonconventional”); (2) conventional loans sold to Fannie Mae or Freddie Mac or placed in pools guaranteed by them (“GSE”); (3) conventional loans sold to an affiliate or held in the portfolio of the originating lender (“portfolio”); and (4) all other conventional loans, including those sold into the private securitization market or to unaffiliated institutions (“other”). Panels 5.A, 5.B, and 5.C show patterns for owner-occupied home-purchase, refinance, and home-improvement loans; panel 5.D shows patterns for all non-owner-occupied loans regardless of purpose.²⁵

Our adjusted data show a greater role for the GSEs than that implied by the raw HMDA data. The raw data reported in table 6 show that 41 percent of owner-occupied refinance loans originated in 2009 were reported as sold directly to the GSEs; our revised data imply that ultimately over 57 percent of such loans were either purchased by the GSEs or placed in a mortgage pool guaranteed by them. The data in figure 5 also show that the subprime-based private securitization market declined at the end of 2006 and throughout 2007, while the GSEs gained market share. Portfolio and nonconventional market shares remained relatively constant until the end of 2007. The years 2008

5. Share of lending, by purpose of loan and occupancy status of home and by type of loan, 2006–09



NOTE: The data are monthly. Loans are first liens on one- to four-family, site-built properties and exclude business loans. For definitions of loan types, see text.

24. For 2009, only the September data were used.

25. The home-improvement and non-owner-occupied loan categories are more heterogeneous than the other two. The home-improvement category may include some “cash-out” refinance loans, which would be treated as refinancings except that some of the funds are used for home improvements, as well as smaller new loans on homes that previously had no mortgage. The non-owner-occupied category presented here is heterogeneous by construction since it includes all types of loans. As a consequence of this heterogeneity, the disposition of liens in these two categories is likely more sensitive to market changes than the refinance and home-purchase categories. The huge jump in GSE share for home-improvement and non-owner-occupied property loans at the end of 2009, for example, is probably occurring because the refinance component of each group rose as part of the late 2009 refinance boom.

and 2009 show a different dynamic, with nonconventional home-purchase market share rising dramatically. The GSEs play a much more prominent role in the refinance market, with their share rising dramatically at the beginning of 2008, falling through August, and then rising again into 2009.

These patterns reflect the actions of a number of players. Nonconventional lending has traditionally focused on the high-LTV market, offering investors mortgage insurance protection against borrower default. Private mortgage insurance companies also offer similar insurance for high-LTV conventional loans, with PMI (or some other credit enhancement) required by statute for loans with LTVs above 80 percent that are sold to the GSEs. Lenders can also choose to forgo PMI and (1) hold the loan directly or (2) issue a second lien for the portion of the loan above 80 percent (a piggyback loan) and still sell the 80 percent loan to the GSEs. The choice among PMI, public mortgage insurance, or a piggyback loan is likely to be made by borrowers (and lenders) based on the relative pricing and underwriting standards of the PMI and the nonconventional loan products. Prices and underwriting established by purchasers in the secondary market also matter. Both GSEs charge fees for loans they purchase or guarantee, with the fees varying by LTV and credit quality. The GSE, FHA, and VA programs are also subject to statutory limits on loan size, which can and have been changed. Finally, the willingness of financial institutions to hold mortgages in portfolio is likely to be sensitive to their costs of funds, their capital position, and other factors.

Many of these items have changed over the past four years and likely influenced the market outcomes. First, the Congress authorized an increase in the loan-size limits applicable for the FHA and VA programs and GSE purchases as part of the Economic Stimulus Act, passed in February 2008; it did so again as part of the Housing and Economic Recovery Act (HERA), enacted in July 2008; and it did so once more as part of the American Recovery and Reinvestment Act (ARRA), passed in February 2009.²⁶

26. New standards released on March 6, 2008, raised the GSE and FHA loan-size limits to \$729,750 in certain areas designated by the Department of Housing and Urban Development as “high cost.” FHA loan limits were also raised above their 2007 levels to new amounts in many other areas. Prior to these changes, the GSEs could not purchase single-family home loans above \$417,000 in most states, while the FHA could not insure single-family home loans above \$271,050 in most areas of the country. (The GSE loan limits were higher in Alaska and Hawaii; the maximum loan size for the FHA program was as low as \$200,160 in some low-cost areas.) VA loans do not have a size limit, but they do have a guarantee limit that is tied to GSE loan limits. FSA loans are also subject to different, and generally higher, limits. Only lower- or moderate-income borrowers in rural areas are eligible for RHS loans, but the loans do not have an

HERA also provided tax assistance (in effect, an interest-free loan) to first-time homebuyers meeting certain income conditions of up to \$7,500 beginning in April 2008. ARRA updated this program, providing a tax credit of up to \$8,000 for first-time homebuyers purchasing a home between January 1, 2009, and November 30, 2009. Finally, the Worker, Homeownership, and Business Assistance Act of 2009 extended the first-time homebuyer tax credit program through April 2010 and allowed certain long-term homeowners purchasing new homes to claim a tax credit of up to \$6,500. By primarily targeting first-time homebuyers, these programs likely stimulated demand for high-LTV home-purchase mortgages. Moreover, an FHA loan may have had particular appeal for such borrowers because the FHA allowed borrowers to use the tax credit in advance as part of their down payment.

Second, with losses mounting in 2007 and 2008, PMI companies tightened underwriting and raised prices starting in the spring of 2008. These changes likely reduced the ability of the GSEs to purchase higher-LTV loans (loans with LTVs above 80 percent) because of the requirement that such loans carry PMI in order to be eligible for GSE purchase. The GSEs also altered their own underwriting and fee schedule in March 2008 and again in June. In particular, the GSEs stopped buying loans with LTVs in excess of 95 percent and increased prices for other high-LTV loans.²⁷ The increased GSE pricing for high-LTV loans was slightly modified in March 2009 but remained in place through the end of 2009. In contrast, the pricing of FHA and VA loans has been little changed from 2006, with a slight increase in pricing in September 2008.²⁸

explicit maximum size limit. The increased limits were allowed to remain in place through the end of 2009. Analysis in a previous article concluded that the increase in limits accounted for less than 10 percent of the growth of nonconventional lending in 2008; nevertheless, the limit increase likely changed the mix of borrowers using these programs. See Avery and others, “The 2008 HMDA Data: The Mortgage Market during a Turbulent Year,” in note 14.

27. PMI annual premiums for loans with LTVs above 80 percent generally range from 0.30 percentage points to 1.20 percentage points, depending on LTV, credit score, and other factors (see, for example, the website of the Mortgage Guaranty Insurance Corporation at www.mgic.com). On March 1, 2008, Fannie Mae and Freddie Mac raised their one-time delivery fees for 30-year loans with LTVs above 70 percent to a range of 0.75 to 2.00 percentage points, depending on the borrower’s credit score. On March 9, 2008, both GSEs added an additional fee of 0.25 percentage point for “market conditions.” In June 2008, the GSEs raised their fees again, by an average of 0.50 percentage point. These fees have remained more or less unchanged since then. In the summer of 2008, many PMI companies announced further increases in their rates, particularly in markets they defined as “distressed.” In some areas, it became almost impossible to obtain PMI for loans with LTVs of greater than 90 percent. Most of these restrictions remained in place for 2009.

28. For the first half of 2008, the FHA charged a flat delivery fee of 1.50 percentage points and an annual premium of 0.50 percentage point to insure 30-year mortgages. On July 14, 2008, the FHA

Both programs have limited ability to price on the basis of risk; program volumes are determined more by the actions of other market participants than by proactive decisionmaking on the programs' part. Toward the end of 2009, the FHA decided to stop making loans to borrowers with FICO scores below 580.²⁹ Otherwise, other than an expansion of the FHA's streamlined refinancing programs, FHA underwriting did not change substantially over this period.³⁰

Other developments likely also affected market shares over the 2006–09 period. The market for private-label mortgage-backed securities essentially disappeared by the beginning of 2007, taking with it much of the subprime mortgage market.³¹ Piggyback loans, which had been a popular vehicle in the high-LTV market, also largely disappeared. Finally, banking in-

implemented a risk-based insurance system with upfront fees for 30-year mortgages ranging from 1.25 to 2.25 percentage points and annual premiums from 0 to 0.55 percentage point, depending on the LTV and credit score of the borrower. The price changes, however, were rolled back by the Congress, which passed legislation prohibiting the use of a risk-based pricing system after October 1, 2008. On that date, the FHA announced a new fee schedule with an upfront fee of 1.75 percentage points and an annual premium of 0.55 percentage point for 30-year loans with LTVs of 95 percent and higher and 0.50 percentage point for those with lower LTVs. These prices prevailed for the rest of 2008 and through the spring of 2010. During the period in which the FHA charged risk-based rates (and during the post-March fixed-rate period), FHA fees were lower than those for loans purchased by the GSEs with PMI (except for borrowers with high credit scores).

Over the scope of our study period, the VA charged an upfront fee of 2.15 percentage points and no annual premium for a veteran using the program for the first time with no down payment (the dominant choice); the fee was reduced to 1.50 percentage points with a 5 percent down payment and to 1.25 percentage points with a down payment of 10 percent or more. The VA has a streamlined refinancing program that allows the refinancing of a VA loan into another VA loan with little documentation and a refinance fee of 0.50 percentage point (other refinance loans have the standard fees). Throughout the study period, the RHS charged a flat upfront fee of 2.00 percentage points.

29. FICO scores are one summary measure of the credit risk posed by an individual based solely on the information contained in the credit reports maintained by the three national credit reporting agencies. FICO scores are produced using statistical models developed by Fair Isaac Corporation. A FICO score of 660 or greater is often viewed as a score range associated with prime-quality borrowers; a score less than 620 is often associated with borrowers with subprime credit quality. For more information, see www.myfico.com/CreditEducation.

30. See U.S. Department of Housing and Urban Development (2010), "Quarterly Report to Congress on FHA Single-Family Mutual Mortgage Insurance Fund Programs" (Washington: HUD, August). This report shows that the percentage of FHA loans issued to borrowers with FICO scores between 580 and 620 also fell sharply in 2009, despite the fact that the FHA did not change its underwriting standards for this group. This reduction likely reflects the actions of lenders who ceased making such loans. Only 6 percent of FHA borrowers in the fourth quarter of 2009 had a FICO score below 620.

31. According to *Inside MBS & ABS*, no new mortgage-backed securities were issued for subprime or alt-A loans or for prime-quality jumbo loans (loans with balances above the conforming loan limits) in 2009. See *Inside Mortgage Finance Publications* (2010), *Inside MBS & ABS*, June 11, www.imfpubs.com.

stitutions may have become less willing to make long-term investments, including holding new mortgage loans in portfolio, for a variety of reasons, including uncertainty about the economic and regulatory environment going forward.

In the remainder of this section, we examine the implications of these market developments in more detail, focusing on the role of the PMI companies and the relative pricing of the conventional and nonconventional markets (for more information about PMI, see box "Private Mortgage Insurance").

PMI Companies under Strain

PMI companies generally reported large net losses in 2007 and 2008. The Mortgage Insurance Companies of America (MICA) reports that its members suffered cumulative operating losses of over \$1.4 billion in 2007 and \$5.8 billion in 2008, compared with operating income of just over \$2 billion in both 2005 and 2006.³² By early 2009, the stocks of several of the largest mortgage insurers had lost almost all of their value, and Standard & Poor's, a credit rating agency, reported in mid-2009 that some major mortgage insurers were at risk of breaching regulatory capital thresholds for writing new business.³³ Indeed, MICA reports that the overall risk-to-capital ratio of its members more than doubled from 9 to 19 between 2006 and 2008, approaching the regulatory maximum of 25.³⁴

Mortgage insurers tightened underwriting standards considerably in 2008 and 2009, especially in company-designated "distressed areas."³⁵ For instance, in 2009, one major insurer began requiring a minimum FICO score of 720 in some distressed markets and 700 in other areas. It also required an LTV ratio below 90 percent and stopped providing insurance on ARMs with an initial fixed period of less than five years in all geographic areas. Another large insurer in 2009 raised its minimum credit score to 680 from 620 and stopped providing insurance on all manufactured housing. This company also set a maximum LTV ratio

32. See Mortgage Insurance Companies of America (2009), "2009–2010 Fact Book & Member Directory" (Washington: MICA), available at www.privatemi.com/news/factsheets/2009-2010.pdf.

33. See Standard & Poor's (2009), "Significant Operating Losses Continue to Pressure U.S. Mortgage Insurers' Capital Adequacy Ratios," *Ratings Direct*, August 21, www.standardandpoors.com/ratingsdirect.

34. One relatively small insurer, Triad Guaranty, was forced to stop writing new policies in 2008.

35. The list of distressed or declining markets varies by mortgage insurance company but typically includes metropolitan areas and states that have experienced severe declines in employment or home prices.

Private Mortgage Insurance

Historically, mortgage lenders extending conventional loans required prospective borrowers to make a down payment of at least 20 percent of a home's value before they would extend a loan to buy a home or refinance an existing mortgage. Private mortgage insurance (PMI) emerged in the 1950s alongside the long-standing Federal Housing Administration (FHA) and Department of Veterans Affairs (VA) government loan programs to help bridge the gap between lenders reluctant to extend mortgages with high loan-to-value (LTV) ratios and consumers interested in borrowing more than 80 percent of the underlying home's value. For a borrower seeking a high-LTV loan, the lender can require that the borrower purchase mortgage insurance to protect the lender against default-related losses up to a contractually established percentage of the principal amount. In fact, a high-LTV loan must have PMI coverage in order to be eligible for purchase by the government-sponsored enterprises (Fannie Mae and Freddie Mac). Over the years, PMI-backed loans became a significant part of the mortgage market and an even more important segment of the insured portion of that market.

PMI Data Reported in Conjunction with the HMDA Data

In 1993, the Mortgage Insurance Companies of America asked the Federal Financial Institutions Examination Council to process data from the largest PMI companies on applications for mortgage insurance and to produce disclosure statements for the public based on the data.¹ The PMI data largely mirror the types of information submitted by lenders covered by

1. Founded in 1973, the Mortgage Insurance Companies of America is the trade association for the PMI industry. The Federal Financial Institutions Examination Council (FFIEC) prepares disclosure statements for each of the PMI companies. The company statements and the PMI data are available from the FFIEC at www.ffiec.gov/reports.htm.

the Home Mortgage Disclosure Act of 1975 (HMDA). However, because the PMI companies do not receive all the information about a prospective loan from the lenders seeking insurance coverage, some items reported under HMDA are not included in the PMI data. In particular, loan pricing information, requests for preapproval, and an indicator of whether a loan is subject to the Home Ownership and Equity Protection Act of 1994 are unavailable in the PMI data.

The handful of companies that typically report data dominate the PMI industry. Therefore, these data cover the vast majority of mortgage insurance written in the United States, allowing for meaningful analysis of these data alongside the HMDA data.² Still, care must be exercised in comparing the PMI and HMDA data. Specifically, because of lender coverage rules under Regulation C, the HMDA data may be less comprehensive than the PMI data, especially in terms of coverage of rural markets. The PMI reporting firms provide information on all privately insured loans regardless of property location. In contrast, HMDA's coverage is most complete for metropolitan areas primarily because lenders that maintain offices exclusively in rural areas need not report HMDA data.

For 2009, eight PMI companies reported on nearly 636,000 applications for insurance leading to the issuance of 367,000 insurance policies, down from about 2 million applications and 1.5 million policies in 2007. About 58 percent of the policies in 2009 covered home-purchase loans, and the remainder covered refinance mortgages. About 12 percent of PMI insurance applications were denied, a rate substantially higher than in 2006 and 2007, when only about 2 percent of the requests for insurance were turned down.³

2. The PMI data do not capture "pool insurance"—that is, insurance written for pools of loans rather than individual mortgage loans.

3. For the other applications that did not result in a policy, the application was withdrawn, the application file closed because it was not completed, or the request was approved but no policy was issued.

of 90 percent in distressed markets and 95 percent in other areas during 2009.³⁶

An analysis of the PMI data reported in conjunction with the HMDA data documents the extent of the decline in PMI by location (designated distressed areas versus all other areas) for loans to purchase site-built one- to four-family homes in metropolitan areas (table 9).³⁷ Although underwriting standards were

36. These are just some of the guidelines issued by these two companies. Distressed market lists and underwriting guidelines are generally available on the mortgage insurance companies' websites.

37. The analysis here is restricted to metropolitan areas since the HMDA mortgage origination data are more complete in metropolitan areas. We divided all MSA counties into the two groups using the

tighter in designated distressed areas during 2009, PMI volume nevertheless fell about 80 percent (derived from data in table 9) relative to 2007 in both types of areas. The ratio of PMI policies to all loans (the rows labeled "Market share" in table 9) fell sharply in all areas

distressed or declining market lists as of early to mid-2009 for three of the largest PMI companies—Genworth Financial, United Guaranty, and Mortgage Guaranty Insurance Corporation. If a county appeared on at least two of three distressed lists (by virtue of its being in a designated distressed metropolitan area or state), then we designated it a distressed county for the analysis. All MSA counties in some states, including Arizona, California, Florida, Michigan, New Jersey, and Nevada, were considered distressed. In contrast, some states such as Texas had no MSA counties marked as distressed.

9. Patterns of lending for insured or guaranteed loans and for all loans in areas grouped by distressed status, 2007 and 2009

Percent except as noted

Characteristic	Type of loan								
	Insured or guaranteed, by type of insurance or guarantee						All ²		
	Private			Government (nonconventional) ¹					
	2007	2009	Difference	2007	2009	Difference	2007	2009	Difference
	Designated as distressed areas ³								
Number of loans (thousands) ⁴	380	71	-309	91	543	452	1,588	1,134	-454
Market share	23.9	6.3	-17.6	5.7	47.9	42.2	100.0	100.0	.0
Non-owner-occupied share	10.1	2.4	-7.8	*	*	*	14.4	10.8	-3.6
LMI share ⁵	43.6	30.5	-13.1	42.3	50.0	7.7	30.5	41.1	10.5
Mean of loan amount to income (ratio)	3.3	2.9	-.4	3.2	3.2	.0	2.9	2.9	.1
	All other areas ³								
Number of loans (thousands) ⁴	589	115	-474	241	619	378	1,851	1,221	-630
Market share	31.8	9.5	-22.4	13.0	50.7	37.7	100.0	100.0	.0
Non-owner-occupied share	9.3	1.6	-7.6	*	*	*	13.6	8.3	-5.4
LMI share ⁵	48.7	29.0	-19.7	43.1	52.6	9.6	36.6	43.5	6.9
Mean of loan amount to income (ratio)	2.7	2.4	-.3	2.6	2.8	.2	2.4	2.5	.2

1. See table 3, note 1.

2. Includes insured, guaranteed, and others.

3. For definition of designated distressed areas, see text.

4. Includes first-lien, home-purchase lending for site-built, one- to four-family properties located in metropolitan statistical areas.

5. Low- or moderate-income (LMI) borrowers have lower income, or the property is in a lower-income census tract. Borrower income is the total income relied upon by the lender in the loan underwriting. Income is expressed relative to the median family income of the metropolitan statistical area (MSA) or statewide non-MSA in which the property being purchased is located. "Lower" is less than 80 percent of the median. The income category of a census tract is the median family income of the tract relative to that of the MSA or statewide non-MSA in which the tract is located. "Lower" is less than 80 percent of the median.

* Less than 0.5 percent.

SOURCE: Federal Financial Institutions Examination Council, data reported under the Home Mortgage Disclosure Act and private mortgage insurance data.

(18 percentage points in distressed areas and 22 percentage points in other areas).

Consistent with tightening standards, the share of PMI to cover loans for non-owner-occupied housing, a class of loans typically considered to entail elevated credit risk, fell sharply in both types of geographic areas. Moreover, these declines exceeded the decline in the percentage of all loans for non-owner-occupied properties (see last column of table 9). Also, the share of borrowers obtaining PMI with low or moderate incomes (LMI) or with property in LMI neighborhoods fell substantially.³⁸ Finally, the average ratio of loan amount to income fell noticeably for loans covered by PMI.

With PMI companies tightening their underwriting standards, many borrowers and lenders seeking a high-LTV loan likely turned to the FHA or other government loan programs. Nonconventional loans more than offset the drop in PMI loans in designated dis-

tressed areas, and the nonconventional share of mortgages surged from just 6 percent in 2007 to 48 percent in 2009 in these areas. Despite the drop in PMI issuance, the total fraction of loans insured or guaranteed through either government or private sources swelled from 30 percent to 54 percent in designated distressed areas. This fraction also rose in all other areas, though not as dramatically. Overall, the use of mortgage insurance of one type or another has risen since 2007, especially in areas designated as distressed by the PMI companies.

GSE Pricing and the Extension of Conventional High-LTV Loans

The similar reduction in PMI issuance in both designated distressed and all other areas suggests that some factor other than PMI underwriting and pricing changes may have contributed to the dearth of conventional high-LTV loans with PMI in 2009. One important determinant of PMI volume is GSE underwriting and pricing. For instance, loans with LTVs above 95 percent were generally ineligible for GSE purchase during 2008 and 2009. Therefore, most borrowers seeking a loan with an LTV in excess of 95 percent were likely to obtain a nonconventional loan rather than a

38. LMI neighborhoods are census tracts with a median family income less than 80 percent of the median family income of the MSA or, for rural areas, the statewide non-MSA where the tract is located. LMI borrowers are those with a reported income less than 80 percent of the median family income of the MSA or statewide non-MSA where the property securing the borrower's loan is located. Borrower income reported in the HMDA data is the total income relied upon by the lender in the loan underwriting.

conventional loan with PMI.³⁹ Also, for borrowers with relatively low FICO scores, GSE pricing in 2008 and 2009 for loans with LTVs between 80 and 95 percent, regardless of PMI pricing and underwriting policies, probably made FHA and VA loans more attractive.

However, for borrowers with moderately high LTVs (80 percent to 95 percent) and higher FICO scores (greater than or equal to 700), GSE pricing by itself would not have discouraged such borrowers from obtaining a conventional loan with PMI during 2009. Therefore, among borrowers with higher FICO scores, PMI pricing and underwriting could have played an important role in determining whether these borrowers obtained a conventional loan with PMI.

We compiled data on individual mortgages from Lender Processing Services, Inc. (LPS), to calculate the FHA or VA share of first-lien home-purchase mortgage originations by LTV and borrower FICO score. The LPS data are drawn from the records of 19 large mortgage servicers, including 9 of the top 10, and therefore provide detailed information on a large portion of the mortgage market. We report the FHA or VA share at each LTV from 65 to 100 percent in increments of 1 percent for borrowers with FICO scores greater than or equal to 700 (figure 6, top panel).⁴⁰ Consistent with the conjecture made earlier, nearly all loans with LTVs over 95 percent were FHA or VA.⁴¹ But even in the range just above 90 percent and below 95 percent, the vast majority of loans were FHA or VA despite the GSEs' favorable pricing for these loans. Instead, the FHA and VA share falls precipitously right at 90 percent (along with a spike in volume), and, overall, only about 30 percent of loans with LTVs between 80 and 90 percent were FHA or VA.⁴² Because neither GSE nor FHA or VA pricing changes substan-

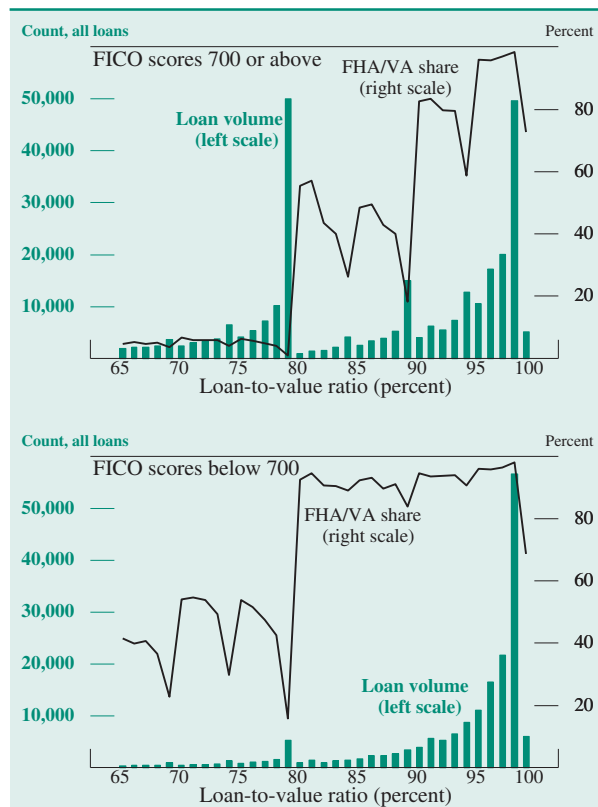
39. Recall that high-LTV loans must have PMI in order to be eligible for purchase by the GSEs. Lenders could of course still originate loans with LTVs above 95 percent and require the borrower to purchase PMI, but these loans would not be eligible for immediate sale to the GSEs. The lender would have to hold the loans in portfolio or sell them on the private secondary market—options that may not have been as viable in 2009 as they were earlier in the decade.

40. Loans were restricted to first-lien 30-year mortgages for single-family owner-occupied properties that were originated between May and December of 2009. We focused on the May to December period because the GSEs introduced price changes in April.

41. FHA and VA loans with LTVs reported in the LPS data as being over 97 percent likely reflect the financing of the upfront insurance premium.

42. It is important to note that the LPS data are not representative and may overrepresent nonconventional and GSE lending. Also, a large number of loans in the LPS data do not have a loan purpose (home purchase or refinance) reported, and these loans are skewed toward the conventional market. For these reasons, the FHA or VA shares reported in figure 6 may be overstated. Although the LPS data lack the broad coverage of the HMDA data, they have important advantages in that they provide much more detailed underwriting information, such as FICO score and LTV, than do the HMDA data.

6. Volume and share of home-purchase loans originated by the Federal Housing Administration and the Department of Veterans Affairs, by loan-to-value ratio, May through December, 2009



NOTE: The data are monthly. Loans are first liens on owner-occupied, single-family, site-built properties with 30-year mortgages. For definition of FICO score, see text note 29.

FHA Federal Housing Administration.

VA Department of Veterans Affairs.

SOURCE: Lender Processing Services, Inc.

tively at the 90 percent threshold, PMI pricing and underwriting may become more favorable at this threshold, causing the sharp shift away from government programs and into the conventional market at 90 percent.

Another downward spike in the nonconventional share occurs at an 85 percent LTV. Again, this spike cannot be explained by FHA, VA, or GSE pricing and thus may be related to PMI policies. Finally, the FHA and VA share falls to about zero at LTVs of 80 percent and below, at which points PMI is not required for a conventional loan.⁴³

Also reported is the FHA and VA share for borrowers with FICO scores less than 700 (figure 6, bottom panel). In contrast to the top panel, the vast majority

43. Of the loans with LTVs between 80 and 90 percent in the top panel of figure 6 that were not FHA or VA, just over 94 percent of them were reported as sold to one of the GSEs. In other words, nearly all of the non-FHA/VA loans in this LTV/FICO cell would have obtained PMI because nearly all were sold to the GSEs.

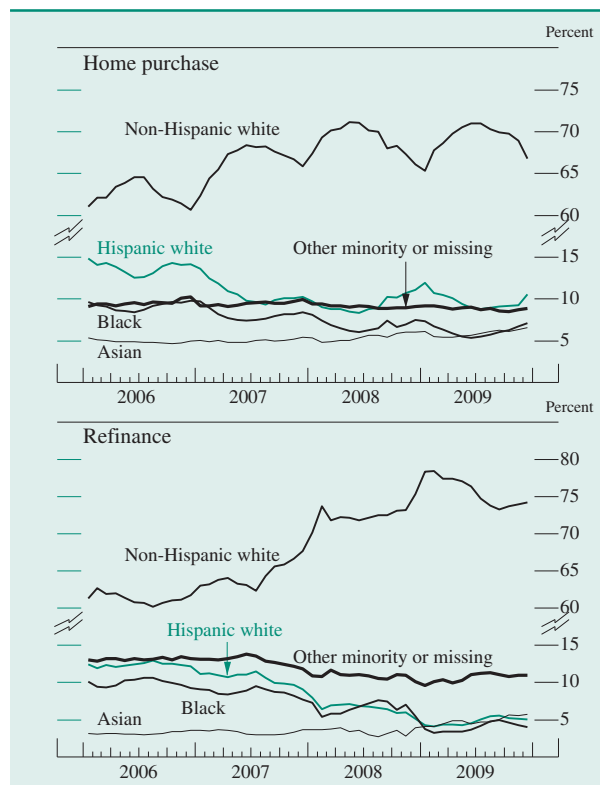
of loans with LTVs over 80 percent were FHA or VA. As mentioned earlier, GSE pricing was unfavorable for borrowers with FICO scores in this lower range, so it is not surprising that these borrowers obtained nonconventional loans.⁴⁴

CHANGES IN TOTAL LENDING BY BORROWER AND AREA CHARACTERISTICS

As discussed earlier, 2008 and 2009 were characterized by the increased roles of the FHA, VA, FSA, and RHS programs and the GSEs. This section examines whether these changes played out differently across borrower groups. We differentiate among borrowers by race and ethnicity, relative income (for both the neighborhood and the borrower), location (state), type of lender, and indicators of low-quality lending.

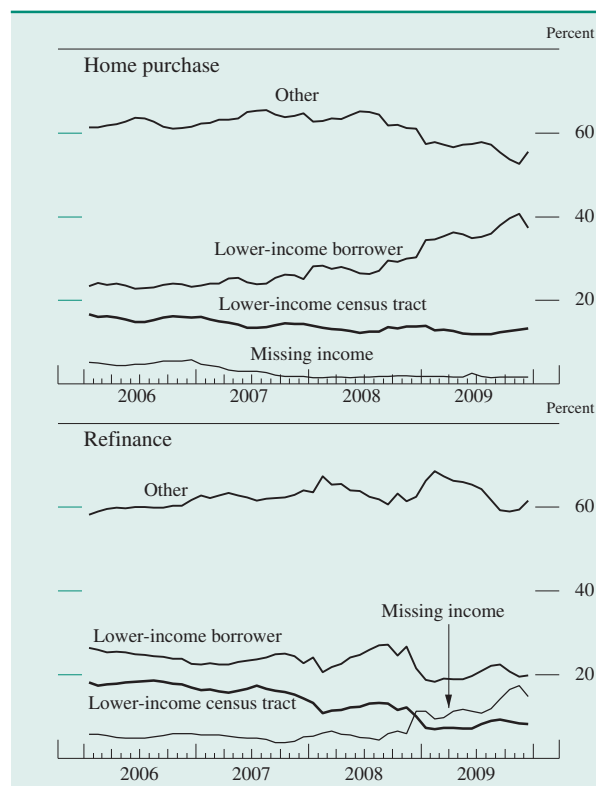
44. The relatively high FHA and VA share of loans with LTVs below 80 percent in the bottom panel of figure 6 may reflect additional, unobserved credit risk such as a high debt-to-income ratio. The downward spikes in the government-backed share at 75 percent and 70 percent may stem from the GSE pricing schedule, which does change at these thresholds for lower-score borrowers in 2009.

7.A. Share of lending extended to minorities, by selected race and ethnicity of borrower, 2006–09



NOTE: The data are monthly. Loans are first liens on owner-occupied, one-to four-family, site-built properties and exclude business loans. For definition of minority, see table 10.A, note 5; for definition of other minority and explanation of “missing,” see table 10.A, note 6.

7.B. Lending extended to borrowers in selected low-income groups as a share of all lending, by type of low-income group, 2006–09

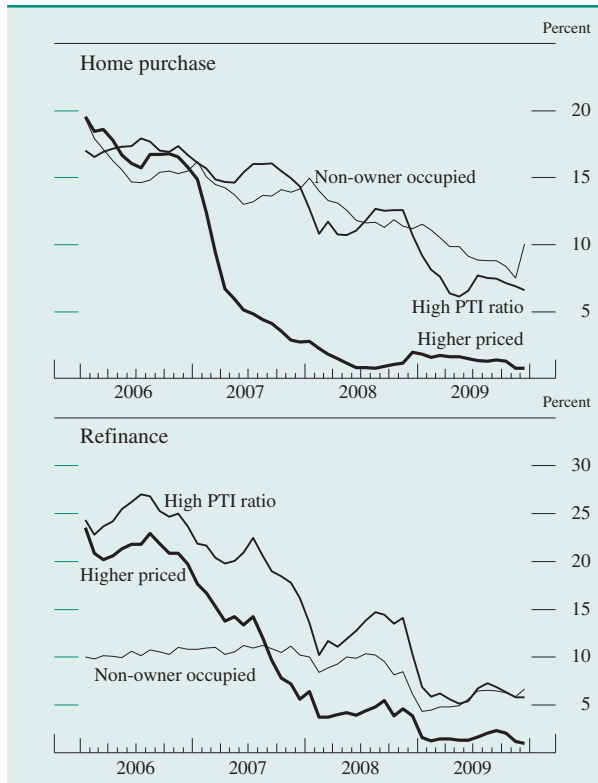


NOTE: The data are monthly. Loans are first liens on owner-occupied, one-to four-family, site-built properties and exclude business loans. Borrower income is the total income relied upon by the lender in the loan underwriting. Income is expressed relative to the median family income of the metropolitan statistical area (MSA) or statewide non-MSA in which the property being purchased is located. “Lower” is less than 80 percent of the median. The income category of a census tract is the median family income of the tract relative to that of the MSA or statewide non-MSA in which the tract is located. “Lower” is less than 80 percent of the median. “Missing” indicates that information for the characteristic was missing on the application. “Other” consists of all non-lower-income and non-missing-income borrowers who are not in a lower-income census tract. Borrower groups are not mutually exclusive; therefore, sums do not add to 100 percent.

Changes in the shares of home-purchase and refinance lending from 2006 to 2009 for different groups are shown (figures 7.A through 7.D). These data indicate different patterns for home-purchase lending compared with refinance lending. For example, the shares of home-purchase loans to black and Hispanic white borrowers decreased over 2008 and 2009, but the decrease in these groups’ shares of the refinance market was more severe. Also, the share of refinance loans to LMI borrowers fell significantly over the sample period, while the share of home-purchase loans to such borrowers increased significantly. Most of this growth took place in 2008 and 2009, when the first-time home-buyer tax credit program was in place.⁴⁵

45. The upward trend in the LMI share of borrowers could reflect, to some extent, inflated measures of borrower income re-

7.C. Share of lending, by loan quality and occupancy status of home, 2006–09



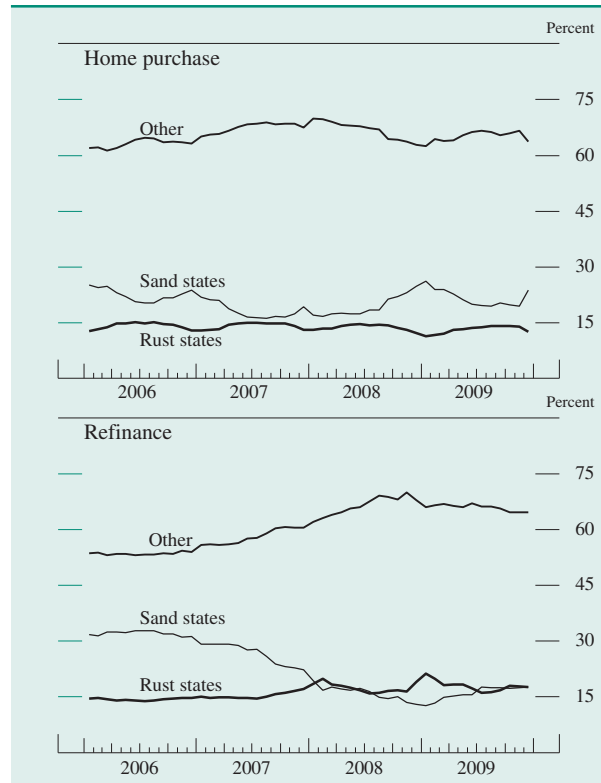
NOTE: The data are monthly. Loans are first liens on owner-occupied (except as noted), one- to four-family, site-built properties and exclude business loans. A payment-to-income (PTI) ratio is considered high if it exceeds 30 percent. For definitions of higher-priced lending and PTI, see text. “Non-owner occupied” includes loans for which occupancy status was missing.

Tax records compiled by the Government Accountability Office (GAO) reinforce the view that first-time homebuyers constituted a sizable portion of the 2008 and 2009 home-purchase population.⁴⁶ The GAO reports that there were just over 1 million first-time homebuyer tax credit claims from April through December of 2008 and just over 1.6 million claims from January through November of 2009. To help put these numbers in context, we calculated the number of first-lien, owner-occupied, home-purchase originations reported in the HMDA data during these two periods and inflated these numbers 25 percent to account for the fact that HMDA does not have universal coverage of the mortgage market. Under the assumption that all first-time homebuyers take out a mortgage, these data imply that first-time homebuyers accounted for about

ported for low- or no-documentation loans in 2006 and 2007, thus biasing downward the LMI share of borrowers in those years.

46. See U.S. Government Accountability Office (2010), *Tax Administration: Usage and Selected Analyses of the First-Time Homebuyer Credit* (Washington: GAO, September 2), www.gao.gov/products/GAO-10-1025R.

7.D. Share of lending, by location of property securing the loan, 2006–09



NOTE: The data are monthly. Loans are first liens on owner-occupied, one- to four-family, site-built properties and exclude business loans. “Sand states” consist of California, Florida, Arizona, and Nevada. “Rust states” consist of Illinois, Indiana, Michigan, Ohio, and Wisconsin. “Other” denotes all remaining states.

48 percent of the home-purchase loans between April 2008 and November 2009.⁴⁷

Figure 7.C shows trends in three metrics of loan quality that can be derived from the HMDA data—the percentage of loans with estimated front-end debt-payment-to-income (PTI) ratios exceeding 30 percent (a warning level in underwriting), the percentage of loans reported as higher priced in the HMDA data, and the percentage of loans for non-owner-occupied properties. All three measures fell significantly over the sample period, although most of this decline had taken place before 2009.⁴⁸

47. The LPS data shown in figure 6 are also consistent with first-time homebuyers making up a large share of the home-purchase mortgage population. These data indicate that a large share of home-purchase loans had LTVs over 95 percent, which may reflect high first-time homebuyer activity since such borrowers have traditionally had less money for a down payment.

48. The monthly mortgage payment used for the PTI is estimated assuming all mortgages are fully amortizing 30-year fixed mortgages. If the loan pricing spread is reported in the HMDA data, the loan contract rate is assumed to be the same as the APR. Otherwise, it is assumed to be equal to the PMMS APR level plus 20 basis points prevailing at the loan’s estimated lock date.

Some of the changes shown thus far in figures 7.A through 7.C may reflect factors specific to certain geographic areas rather than factors specific to certain demographic groups. For instance, a decline in lending in California relative to the rest of the nation would tend to generate a relative decline in lending to Hispanic white borrowers because of the prevalence of this group in California. As shown in figure 7.D, the share of loans extended to residents of the “sand states”—California, Florida, Arizona, and Nevada—declined, particularly for refinance lending. Nevertheless, even after controlling for differential trends in lending across markets, the racial and income trends described earlier mostly remain (data not shown in tables).

Borrowers of different demographic groups showed large differences in their propensity to use different types of loans, with significant changes from year to year (tables 10.A and 10.B). All groups showed substantial increases in their use of nonconventional loans from 2006 through 2009. Black and Hispanic white borrowers, however, relied particularly heavily on these government programs. In 2009, more than 80 percent of home-purchase loans and more than 50 percent of refinance loans to black borrowers were nonconventional. For Hispanic white borrowers in 2009, nearly three-fourths of their home-purchase loans and 30 percent of their refinance loans were nonconventional. In 2006, over 40 percent of home-purchase and refinance loans to both black and Hispanic white borrowers were sold into the private securities market or sold to a nongovernment purchaser. By 2007, these shares had dropped considerably, and the GSE and portfolio shares of loans among these groups had grown. In 2008 and 2009, the share of home-purchase loans to black and Hispanic white borrowers that were sold to the GSEs fell, while the share of refinance loans to both groups that were sold to the GSEs rose from 2007 through 2009.

Patterns of loan-type incidence for LMI borrowers and borrowers living in LMI tracts are similar to those for black and Hispanic white borrowers but are more muted. Loans to these borrowers were less likely to be sold on the nongovernment secondary market in 2006, and the shift toward nonconventional loans in 2008 and 2009 was not as large. The share of borrowers with income missing from their loan applications fell from 2006 through 2009 (more than one-half of these loans were sold into the private secondary market in 2006). The incidence of missing income for refinance loans actually rose in 2008 and 2009, likely the result of “streamlined” refinance programs.

In 2006 and 2007, nonconventional loans as well as GSE loans were significantly less likely than portfolio

or private secondary-market loans to be classified as low quality by our measures—high PTI or higher priced. However, by 2008, this lower incidence for high-PTI loans had largely disappeared. The secondary market for loans reported as higher priced in the HMDA data appears to have largely disappeared, as most of these loans ended up in lenders’ portfolios in 2008 and 2009.

Loans originated in the sand states in 2006 and 2007 were much more likely to be sold into the private secondary market than loans originated in other states. By 2008, differences in the disposition patterns between the sand states and the rest of the country had largely disappeared in the home-purchase market, likely in part because of changes in the FHA and GSE loan limits. However, in the refinance market, loans originated in the sand states in 2008 and 2009 were more likely to be purchased by the GSEs and less likely to be part of the nonconventional loan programs than loans in other states.

CHANGES IN THE STRUCTURE OF THE MORTGAGE INDUSTRY

As noted, the HMDA data cover the majority of home loans originated in the United States and include nearly all home lenders with offices in metropolitan areas. As a consequence of its broad coverage, the HMDA data can be used to reliably track changes in the structure of the mortgage industry and the sources of different loan products.

Historically, depository institutions, particularly savings institutions, were a leading source of mortgage credit. In 1980, savings institutions extended about one-half of the home loans, and commercial banks nearly one-fourth of such loans.⁴⁹ As the secondary market for mortgages evolved, and originating lenders no longer needed to hold loans in portfolio, opportunities became available for a wider group of lenders to enter the market and compete with the traditional types of originating institutions. Mortgage companies emerged as a major source of loans. Most mortgage companies are independent of depositories, but some are affiliates or direct subsidiaries of depositories. Both types of mortgage companies rely on a wide-reaching base of independent or affiliated brokers to find customers and take applications. By the early 1990s, mort-

49. See The Joint Center for Housing Studies, Harvard University (2002), *The 25th Anniversary of the Community Reinvestment Act: Access to Capital in an Evolving Financial Services System* (Cambridge, Mass.: JCHS, March).

10. Incidence of selected types of loans, by purpose of the loan and by various defining characteristics, 2006–09

A. Home purchase

Percent except as noted

Characteristic	Nonconventional ¹	GSE ²	Other ³	Portfolio ⁴	Nonconventional ¹	GSE ²	Other ³	Portfolio ⁴	Nonconventional ¹	GSE ²	Other ³	Portfolio ⁴	Nonconventional ¹	GSE ²	Other ³	Portfolio ⁴
	2006				2007				2008				2009			
<i>Minority status of borrower⁵</i>																
Black or African American	13.9	16.9	43.2	26.0	21.9	34.2	15.7	28.2	64.0	19.4	5.2	11.4	81.4	9.2	2.6	6.8
Hispanic white	7.0	18.2	46.5	28.3	12.2	37.0	17.2	33.6	51.5	29.5	6.1	13.0	73.6	15.3	4.1	6.9
Asian	2.7	30.7	33.5	33.1	3.2	43.0	17.1	36.7	14.8	54.8	10.2	20.2	27.3	49.5	9.4	13.9
Non-Hispanic white	9.6	33.2	27.8	29.4	11.5	44.0	16.2	28.4	35.4	36.2	9.9	18.5	52.1	28.9	7.1	11.9
Other minority or missing ⁶	6.2	26.5	35.3	32.0	9.4	41.9	16.9	31.8	33.4	40.4	7.8	18.4	51.3	30.4	6.1	12.3
<i>LMI census tract or borrower⁷</i>																
Census tract	9.6	22.1	38.9	29.4	13.8	39.0	15.5	31.7	45.5	30.9	7.2	16.5	64.3	20.0	5.2	10.4
Borrower	14.9	30.2	27.6	27.4	15.9	43.0	15.1	26.0	46.1	30.2	8.7	15.0	65.3	20.6	5.3	8.8
Other ⁸	7.7	30.6	32.5	29.2	10.6	42.9	16.5	30.0	33.5	38.6	9.4	18.4	47.2	32.7	7.5	12.6
Missing ⁹	1.7	15.9	41.8	40.7	4.7	29.8	24.1	41.5	37.0	25.4	8.5	29.1	53.3	24.7	5.8	16.2
<i>Loan characteristic or occupancy status</i>																
High payment-to-income ratio ¹⁰	5.4	19.3	44.8	30.6	7.5	39.9	19.4	33.3	32.8	38.4	10.9	17.9	54.8	27.3	7.7	10.1
Higher priced ¹¹	.1	5.2	70.9	23.8	.5	27.3	25.6	46.6	10.2	17.3	10.6	61.8	15.5	8.5	5.2	70.8
Non-owner occupied ¹²	.0	30.0	32.3	37.7	.0	42.8	15.7	41.5	.6	53.9	10.4	35.1	.3	56.2	12.0	31.4
<i>Property location¹³</i>																
Sand states	2.6	19.6	46.2	31.6	6.0	37.1	20.0	36.9	39.8	38.4	8.1	13.7	57.8	27.4	7.3	7.4
Rust states	9.4	35.1	26.5	29.0	11.3	46.6	13.0	29.1	35.9	35.8	8.2	20.1	50.8	30.8	5.0	13.4
Other	11.1	30.8	29.4	28.7	13.5	42.6	16.1	27.8	37.2	35.1	9.5	18.2	54.0	27.2	6.7	12.1
<i>Type of lender</i>																
Depository	7.5	31.2	19.3	42.0	9.0	41.5	9.0	40.5	30.1	40.7	5.8	23.4	45.7	33.7	4.4	16.2
Affiliate of depository	8.9	44.6	31.1	15.4	10.7	57.1	16.0	16.2	35.8	45.5	7.7	11.0	56.2	32.0	4.1	7.7
Independent mortgage company	10.8	16.1	49.8	23.3	19.0	32.0	33.2	15.8	55.1	20.7	17.2	7.0	69.1	16.0	11.3	3.7
Total	9.0	28.9	32.8	29.4	11.8	42.2	16.4	29.7	37.5	35.8	9.1	17.6	54.4	27.7	6.6	11.3

NOTE: First-lien mortgages for owner-occupied, one- to four-family, site-built properties; excludes business loans.

1. See table 3, note 1.

2. Government-sponsored enterprise (GSE) loans are all originations categorized as conventional and sold to Fannie Mae, Freddie Mac, Ginnie Mae, or Farmer Mac.

3. Other loans are conventional loans sold to non-government-related or non-affiliate institutions.

4. Portfolio loans are conventional loans held by the lender or sold to an affiliate institution.

5. Categories for race and ethnicity reflect revised standards established in 1997 by the Office of Management and Budget. Applicants are placed under only one category for race and ethnicity, generally according to the race and ethnicity of the person listed first on the application. However, under race, the application is designated as *joint* if one applicant reported the single designation of white and the other reported one or more minority races. If the application is not joint but more than one race is reported, the following designations are made: If at least two minority races are reported, the application is designated as *two or more minority races*; if the first person listed on an application reports two races, and one is white, the application is categorized under the minority race. For loans with two or more applicants, lenders covered under the Home Mortgage Disclosure Act report data on only two.

6. Other minority consists of American Indian or Alaskan Native, and Native Hawaiian or other Pacific Islander. “Missing” indicates that information for the characteristic was missing on the application.

7. See table 9, note 5.

8. Other consists of all non-lower- and non-missing-income borrowers who are not in a lower-income census tract.

9. Income was not relied upon in the underwriting of the loan.

10. High payment-to-income ratio is 30 percent or more.

11. For definition of higher-priced lending, see text.

12. Includes loans for which occupancy status was missing.

13. “Sand states” consist of California, Florida, Arizona, and Nevada; “rust states” consist of Illinois, Indiana, Michigan, Ohio, and Wisconsin; “other” consists of all other states.

gage companies originated more than one-half of home loans.⁵⁰

During the 1980s and through the first half of the 1990s, mortgage companies and depositories largely competed for borrowers of prime and near-prime quality, with a large proportion of these loans eventually being purchased or backed by Fannie Mae or Freddie Mac for sale to investors. Over the next decade or so, as lenders and investors became more comfortable with

lending to borrowers with weaker credit histories or other characteristics that signaled elevated credit risk, the subprime and private securitization markets expanded.

By 2006, mortgage companies, including both independent institutions and those affiliated with a depository institution, originated about 57 percent of all loans and 72 percent of the higher-priced loans (table 11). As shown in tables 10.A and 10.B, affiliated mortgage companies tended to sell loans to the GSEs, while independent mortgage companies were the dominant suppliers of the private secondary market. The collapse of the subprime market in the first half of

50. See U.S. Department of Housing and Urban Development, Office of Policy Development and Research, “U.S. Housing Market Conditions: National Data,” webpage, www.huduser.org/periodicals/ushmc/fall97/nd_hf.html.

10. Incidence of selected types of loans, by purpose of the loan and by various defining characteristics, 2006–09

B. Refinance

Percent except as noted

Characteristic	Nonconventional ¹	GSE ²	Other ³	Portfolio ⁴	Nonconventional ¹	GSE ²	Other ³	Portfolio ⁴	Nonconventional ¹	GSE ²	Other ³	Portfolio ⁴	Nonconventional ¹	GSE ²	Other ³	Portfolio ⁴
	2006				2007				2008				2009			
<i>Minority status of borrower⁵</i>																
Black or African American	4.4	16.6	41.2	37.8	10.2	29.3	16.8	43.7	38.9	30.3	4.9	25.9	52.5	31.1	4.3	12.1
Hispanic white	1.8	19.2	43.4	35.6	3.9	34.3	18.7	43.1	19.8	47.4	7.2	25.7	30.1	48.4	7.4	14.1
Asian .....	.7	24.1	35.5	39.7	1.2	35.7	17.7	45.4	5.4	59.2	10.0	25.4	6.5	70.7	10.1	12.6
Non-Hispanic white	2.6	27.3	31.2	38.9	4.9	39.5	16.0	39.6	16.0	47.2	9.5	27.3	16.9	58.5	9.7	14.9
Other minority or missing ⁶	1.8	21.9	42.6	33.7	4.2	36.4	20.8	38.6	18.9	50.0	7.8	23.3	19.2	58.1	7.2	15.6
<i>LMI census tract or borrower⁷</i>																
Census tract	2.9	19.5	40.0	37.7	6.2	33.5	17.3	43.0	24.6	40.7	6.8	27.9	31.2	45.9	6.9	16.0
Borrower	2.9	25.5	33.0	38.6	5.7	38.9	15.2	40.2	18.3	44.7	8.2	28.8	16.8	57.4	8.9	16.9
Other ⁸	1.7	25.2	35.3	37.8	3.8	38.3	17.7	40.2	13.3	49.8	9.8	27.0	8.9	64.6	10.7	15.9
Missing ⁹	11.2	21.6	34.6	32.6	17.4	28.6	16.4	37.6	58.7	26.6	2.7	12.0	75.5	19.6	1.4	3.6
<i>Loan characteristic or occupancy status</i>																
High payment-to-income ratio ¹⁰ .....	.9	16.4	49.5	33.2	2.4	31.9	23.1	42.6	15.7	47.9	10.5	26.0	20.2	56.5	10.6	12.8
Higher priced ¹¹ .....	.1	3.7	60.1	36.1	.2	10.1	27.0	62.6	1.8	9.8	2.9	85.5	8.5	7.9	2.7	80.9
Non-owner occupied ¹² .....	.1	23.8	36.0	40.0	.1	38.2	17.0	44.6	.9	52.0	8.8	38.3	2.0	61.1	9.3	27.7
<i>Property location¹³</i>																
Sand states .....	.7	21.5	42.4	35.4	1.6	34.8	20.6	43.0	9.3	56.7	9.7	24.3	14.0	63.3	10.3	12.4
Rust states	4.0	28.3	29.1	38.6	7.6	40.4	12.8	39.2	19.0	46.0	8.1	26.9	16.9	60.7	7.7	14.7
Other	3.2	25.2	32.8	38.9	6.0	38.0	16.5	39.5	19.4	44.7	8.9	27.1	20.2	55.2	9.3	15.3
<i>Type of lender</i>																
Depository	1.8	26.1	17.4	54.7	3.6	36.2	7.4	52.8	11.4	50.3	5.4	32.9	12.2	63.1	6.5	18.2
Affiliate of depository	2.1	38.4	33.3	26.2	3.2	47.3	18.7	30.8	15.5	51.4	8.1	25.0	18.2	67.7	5.1	9.0
Independent mortgage company	3.6	13.1	57.8	25.4	10.1	31.2	37.7	21.1	38.0	33.7	20.0	8.4	38.6	36.0	18.9	6.5
Total	2.5	24.4	35.3	37.7	5.0	37.5	17.1	40.4	17.6	46.9	8.9	26.6	18.6	57.5	9.2	14.7

NOTE: See notes to table 10.A.

11. Distribution of reported higher-priced lending, by type of lender, and incidence at each type of lender, 2006–09

Percent except as noted

Type of lender	Higher-priced loans						MEMO: All loans	
	Old pricing rules ¹			New pricing rules ²				
	Number	Distribution	Incidence	Number	Distribution	Incidence	Number	Distribution
2006								
Independent mortgage company	1,291,245	45.7	39.2	...	...	...	3,290,902	31.6
Depository	801,001	28.4	18.0	...	...	...	4,459,306	42.9
Affiliate or subsidiary of depository	731,703	25.9	27.6	...	...	...	2,649,644	25.5
Total	2,823,949	100	27.2	...	...	...	10,399,852	100
2007								
Independent mortgage company	307,933	21.1	18.3	...	...	...	1,683,792	20.4
Depository	660,518	45.3	14.2	...	...	...	4,649,803	56.4
Affiliate or subsidiary of depository	489,927	33.6	25.7	...	...	...	1,905,246	23.1
Total	1,458,378	100	17.7	...	...	...	8,238,841	100
2008								
Independent mortgage company	120,605	18.2	9.1	...	...	...	1,319,714	21.3
Depository	401,594	60.8	9.9	...	...	...	4,044,889	65.3
Affiliate or subsidiary of depository	138,709	21.0	16.8	...	...	...	826,848	13.4
Total	660,908	100	10.7	...	...	...	6,191,451	100
2009								
Independent mortgage company	71,679	20.8	4.1	4,088	14.7	1.5	2,026,273	24.2
Depository	243,974	70.6	5.0	21,957	79.0	3.6	5,499,235	65.8
Affiliate or subsidiary of depository	29,779	8.6	4.0	1,754	6.3	1.9	832,555	10.0
Total	345,432	100	4.7	27,799	100	2.9	8,358,063	100

NOTE: First-lien mortgages for site-built properties; excludes business loans. For definition of higher-priced lending, see text.

1. Higher-priced loans defined prior to October 1, 2009.

2. Higher-priced loans defined on or after October 1, 2009.

... Not applicable.

2007 and the ensuing financial crisis, however, greatly diminished the role of mortgage companies. By 2009, mortgage companies extended only 34 percent of the loans, with independent mortgage companies accounting for about two-thirds of this total. The disposition of loans by affiliates much more closely mirrored that by depositories; independent mortgage companies were still more likely to sell loans into the private secondary market and showed higher incidence of nonconventional lending than affiliates or depositories (tables 10.A and 10.B).

Aside from changes in the broad types of lenders extending credit, another development in the mortgage market has been an increase in market concentration, which can be documented using the HMDA data. For example, the 10 organizations that extended the largest number of home-purchase loans in 1990 accounted for about 17 percent of all reported loans of this type; in 2009, the largest 10 organizations accounted for 35 percent of the home-purchase loans (data not shown in tables).⁵¹ This consolidation is likely driven, at least in part, by economies of scale in underwriting, loan processing, and loan servicing. However, despite the growing importance of a relatively few large mortgage originators, the vast majority of markets (represented in our analysis by MSAs) remain relatively unconcentrated, with prospective borrowers having a wide range of options.

One widely used metric for the degree of competition in a local market is the Herfindahl-Hirschman Index (HHI).⁵² According to merger guidelines from the U.S. Department of Justice and the Federal Trade Commission, markets with HHI values less than 1,000 are considered unconcentrated, those with values from 1,000 to 1,800 are considered moderately concentrated, and those with values above 1,800 are considered concentrated. Based on the 2009 HMDA data for home-purchase lending, 81 percent of 392 MSAs would be considered unconcentrated, 17 percent moderately concentrated, and 2 percent concentrated (data not shown in tables).⁵³ By comparison, in 1990, 60 percent of the MSAs were unconcentrated, 29 percent moderately concentrated, and 11 percent concentrated. By this measure of competition, a larger share of local markets was unconcentrated or moderately concentrated

in 2009 than in 1990 despite the increase in mortgage market concentration at the national level.

SUBDUED REFINANCE ACTIVITY IN 2009

As shown earlier in figure 1, the average annual percentage rate for a prime-quality 30-year fixed-rate mortgage fell abruptly at the end of 2008 and into 2009, dropping under 5 percent in April and May. Refinance lending simultaneously surged, peaking at over 645,000 loans in May 2009 before falling back to monthly levels more similar to those seen in 2006 and 2007 despite the APR staying at historically low levels near 5 percent.

Compared with previous periods when interest rates declined sharply, the surge in refinance lending in 2009 appears to have been quite weak. Interest rates also fell sharply from 2001 to 2003, and refinance loan volume increased to more than 15 million in 2003 (shown earlier in table 2.B), far greater than the refinancing volume in 2009 of about 5.8 million loans. One possible reason that refinance activity was not stronger in 2009 is that many of the mortgages available to be refinanced in that year were originated between 2003 and 2005, when interest rates were quite low and therefore refinancing these loans may not have offered a significant enough benefit to borrowers to offset the transaction costs.

Other potential obstacles to refinance activity in 2009 were high unemployment and underemployment, as well as severely depressed home values resulting in low or negative equity positions. From the end of 2006 to the end of 2009, the national unemployment rate more than doubled to 10 percent, according to the Bureau of Labor Statistics, and house prices fell nearly 11 percent, according to the Federal Housing Finance Agency (FHFA) home price index. Several states experienced deeper home price declines over this period, most notably the sand states plus Michigan, where the FHFA index fell more than 20 percent. Many households may not have been able to refinance to take advantage of the low rates because they did not have enough home equity or they did not meet lenders' income and employment requirements.

We present payoff rates—a rough proxy for refinance rates—during 2009 for 30-year fixed-rate conventional mortgages active as of December 2008 using data from LPS (table 12). The loans are divided into three broad groups: (1) those with a “clean” payment history (no delinquencies on the mortgage) in the 12 months prior to December 2008 and secured by a property outside of Arizona, California, Florida, Michigan, and Nevada; (2) those with a clean payment history in the 12 months prior to December 2008, but inside Arizona, California, Florida, Michigan, and

51. For purposes of these calculations, affiliated entities, whether banking institutions or mortgage companies, were consolidated into a single organization.

52. See U.S. Department of Justice and Federal Trade Commission (2010), *Horizontal Merger Guidelines* (Washington: DOJ and FTC).

53. HHI values were calculated based on 2009 HMDA data for first-lien home-purchase loans for site-built properties. The analysis was limited to the data for MSAs because HMDA coverage is most complete for such areas.

12. Mortgage payoff rates during 2009 for loans active as of December 2008, by loan’s payment history, geographic location, and year of loan origination

Percent

Year of loan origination ¹	Status of loan’s 12-month payment history									MEMO: PMMS average rate ¹
	Clean, by location						Blemished			
	Outside Ariz., Calif., Fla., Mich., and Nev.			Inside Ariz., Calif., Fla., Mich., and Nev.						
	Share of all loans	Median interest rate	Share paid off in 2009	Share of all loans	Median interest rate	Share paid off in 2009	Share of all loans	Median interest rate	Share paid off in 2009	
1999 or earlier.....	3.2	7.250	15.5	1.2	7.250	12.0	.8	7.625	5.4	*
2000.....	.2	8.125	10.7	.1	8.125	7.9	.1	8.375	1.4	8.1
2001.....	1.5	6.750	19.3	.5	6.875	19.0	.4	7.250	5.8	7.0
2002.....	4.1	6.250	23.7	1.5	6.250	18.4	.6	6.750	4.9	6.5
2003.....	12.0	5.750	17.1	5.5	5.750	14.6	1.3	5.875	5.9	5.8
2004.....	6.9	5.875	17.1	2.6	5.875	11.4	1.0	6.125	3.8	5.8
2005.....	9.3	5.875	16.2	3.8	5.875	9.3	1.7	6.125	3.5	5.9
2006.....	8.8	6.500	23.4	3.0	6.420	9.6	2.0	6.750	3.5	6.4
2007.....	11.2	6.375	21.7	3.6	6.375	11.4	2.2	6.750	3.7	6.3
2008.....	7.7	6.000	19.6	2.7	6.000	17.7	.4	6.500	5.3	6.0
MEMO										
All origination years.....	65.2	6.125	19.3	24.4	6.000	12.8	10.4	6.625	4.2	*

NOTE: Loans restricted to 30-year fixed-rate conventional first-lien mortgages, active as of December 2008, for owner-occupied single-family homes.

1. Average mortgage interest rate for 30-year fixed-rate mortgage reported by Freddie Mac’s Primary Mortgage Market Survey (PMMS).

* Average not calculated because loans span many origination years.

SOURCE: Lender Processing Services.

Nevada; and (3) those with a “blemished” payment history (at least one instance of being 30 days or more in arrears) in the 12 months prior to December 2008.⁵⁴ The second group captures borrowers most likely to be facing low or negative equity, and the third group captures distressed borrowers regardless of geographic location.⁵⁵ The table disaggregates loans by year of origination in order to show differences in payoff rates across years with differing levels of interest rates.

As shown in the bottom row of the table, 65.2 percent of loans in the sample were in the first group, 24.4 percent were in the second group, and 10.4 percent were in the third group. Thus, more than one-third of the loans either had a blemished 12-month payment history or were in one of the five states that experienced the sharpest home price declines from the end of 2006 to the end of 2009.

As mentioned earlier, many mortgages were originated between 2003 and 2005 when rates were quite low, and thus refinancing these loans in 2009 may not have offered a significant benefit to borrowers. Focusing just on the first group of loans, in which negative equity and borrower distress should have been less common, one can see that a substantial fraction of loans active as of December 2008 were in fact origi-

nated in the period from 2003 to 2005. Moreover, payoff rates for these loans were relatively low. For instance, the payoff rate for the 2005 cohort, which had a median interest rate of 5.875 percent, was 16.2 percent, compared with 23.4 percent for loans originated in the next year, which had a median interest rate of 6.5 percent.⁵⁶

Low or negative home equity and the economic recession may also have muted recent refinance activity. Consistent with this view, the overall payoff rate for loans in the first group is substantially higher, at about 19 percent, than that for loans in the second and third groups, at about 13 percent and 4 percent, respectively.⁵⁷ These payoff rates reflect both refinancing and home sales. Nevertheless, the difference in payoff rates across the groups likely reflects the difficulties of refinancing for distressed borrowers and borrowers with low or negative equity. Indeed, the difference in payoff rates is most pronounced for loans originated in 2006 when interest rates were relatively high. Among loans

56. Tightened mortgage lending standards, as documented in the Federal Reserve’s Senior Loan Officer Opinion Survey on Bank Lending Practices (www.federalreserve.gov/boarddocs/SnLoanSurvey), is another reason that refinance activity may have been muted in 2009 relative to 2003. Tighter standards could have damped refinance activity even among borrowers in the first group (those with a clean payment history and outside the five states with steep home price declines). The information presented in table 12 does not shed light on the extent to which underwriting standards may have affected refinance activity in 2009.

57. A substantial fraction of loans in the third group (those with a blemished payment history) entered the foreclosure process during 2009. Loans that terminated through foreclosure during 2009 are not counted among the loans that were paid off when calculating the payoff rates in table 12.

54. Loans in the foreclosure process as of December 2008 were dropped from the analysis sample, which otherwise included all first-lien 30-year mortgages for single-family owner-occupied properties in the LPS database that were active as of that date.

55. The LPS data used here do not include updated home values associated with the mortgages, so it is not possible to determine the changes in home values for the properties related to the mortgages.

originated in that year, 23.4 percent of loans in the first group were paid off during 2009, compared with only 9.6 percent of loans in the second group and 3.5 percent in the third group.

PATTERNS OF LENDING IN DISTRESSED NEIGHBORHOODS

The difficult economic circumstances of the past few years have not fallen equally across all areas. Housing, mortgage market, and employment conditions differ appreciably across regions of the country, submarkets, and neighborhoods (represented here by census tracts) within these broader areas. Some areas have experienced much more distress than others. In some neighborhoods, high levels of distress have persisted for some time; in others, conditions have recently deteriorated.

Concerns about credit conditions in areas experiencing high levels of distress have received heightened attention from policymakers and others. For example, in June 2010, the federal bank and savings institution regulatory agencies proposed changes to the rules that implement the Community Reinvestment Act (CRA) to support the stabilization of communities hit hard by elevated foreclosures.⁵⁸ The revised regulations would encourage covered institutions to support the Neighborhood Stabilization Program (NSP), administered by the Department of Housing and Urban Development.⁵⁹ Under the proposal, lenders would be encouraged to make loans and investments and provide services in support of NSP activities to individuals and neighborhoods beyond the traditional focus of the CRA, which is on LMI individuals and LMI areas. Allowing banking institutions to receive CRA consideration for activities conducted in NSP-targeted neighborhoods and directed to individuals in such areas provides additional incentives for these institutions to leverage government funds targeted to these areas and populations.

58. For more information about the CRA, see Federal Financial Institutions Examination Council, “Community Reinvestment Act,” webpage, www.ffiec.gov/cra. More information about the proposed revision to the CRA is in Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, Office of the Comptroller of the Currency, and Office of Thrift Supervision (2010), “Agencies Propose to Expand Scope of Community Reinvestment Act Regulations to Encourage Depository Institution Support for HUD Neighborhood Stabilization Program Activities,” joint press release, June 17, www.federalreserve.gov/newsevents/press/bcreg/20100617c.htm.

59. The NSP program allocates funds to local counties and states with problems arising from the mortgage foreclosure crisis. The funds are intended to acquire, repair, and resell foreclosed and abandoned properties. See U.S. Department of Housing and Urban Development, “Neighborhood Stabilization Program Resource Exchange,” webpage, <http://hudnshelp.info/index.cfm>.

Given the public policy focus on areas in distress, it is important to learn more about how the changing economic conditions have affected the availability of mortgage credit in distressed areas. The HMDA data can be used to identify differences in the access to and use of credit along a number of dimensions across census tracts sorted by the degree of distress they have experienced in their local mortgage market. For the analysis here, aggregated credit record information provided by Equifax is used to measure the degree of distress a neighborhood faces. We identify those census tracts where at least 10 percent of mortgage borrowers had a loan in foreclosure and designate these tracts as “high-foreclosure tracts.”⁶⁰ Over 75 percent of these tracts are located in the sand states, with Florida alone accounting for almost one-half of the tracts.

In 2009, home-purchase lending in high-foreclosure tracts, derived from the HMDA data, hovered around 30 percent of its average level in 2004 (figure 8, panel A). While lending in non-high-foreclosure (“other”) tracts was also down considerably from 2004 levels, the declines have not been as severe. This difference is particularly pronounced given that lending in the high-foreclosure tracts was considerably higher in 2005 and 2006 than in these other areas.

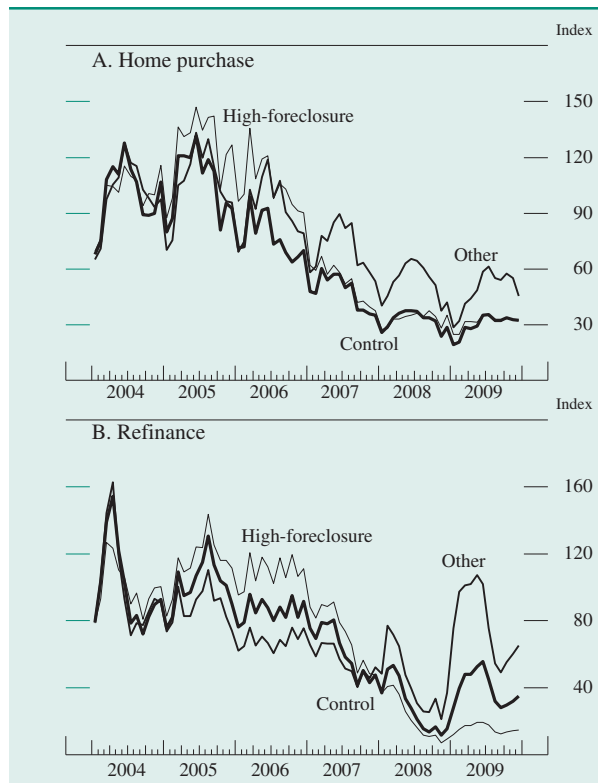
A large portion of the difference in home-purchase lending between high-foreclosure and other tracts derives from geographic location. The sand states have been particularly hard hit by the downturn in the housing market, and, as a result, some of the differences between the high-foreclosure and other tracts represent market-level (MSA) differences. When the distribution of high-foreclosure tracts across MSAs is controlled for (shown by the line labeled “Control”), home-purchase lending levels in the high-foreclosure tracts appear to be consistent with those in other tracts in the same MSAs.

As discussed earlier, borrowers in distressed areas are less likely to refinance their mortgages. The refinance lending in the high-foreclosure tracts was down substantially from earlier years (figure 8, panel B). This decline was much more severe than that experienced in the other tracts or in the control tracts, despite the

60. Equifax is one of the three national consumer reporting agencies. The credit-record-based data used here include a count within each census tract of the number of individuals who had either a first mortgage or a home equity loan and a count of the number of individuals with a record of a foreclosure action as of December 31, 2008. These data included no individually identifying information. See www.equifax.com for more information about Equifax.

In some cases, a mortgage or record of a foreclosure action may relate to a property located in a census tract other than the current residence of the individual, which is how individuals are assigned to census tracts. Credit records include the address of the individual, but this address may not be the one of the property associated with any record of a mortgage.

8. Indexed volume of lending, by census-tract group, 2004–09



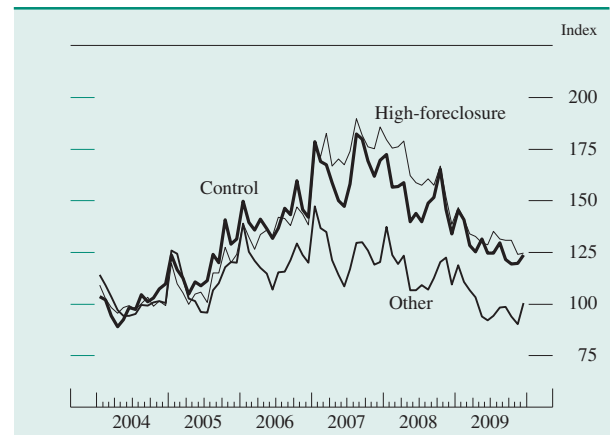
NOTE: The data are monthly. Loans are first-lien mortgages for site-built properties and exclude business loans. Index is normalized to 100 for average monthly lending volume in 2004. For definitions of census-tract groups, see text.

consistently higher levels of refinance lending in the high-foreclosure tracts from 2005 through 2007.

In spite of the similar patterns in home-purchase lending in the high-foreclosure and control tracts, some aspects of lending do appear to differ. For example, denial rates for home-purchase loans, which have been in decline since peaking in 2007, have been higher, relative to their 2004 levels, in the high-foreclosure tracts (figure 9). Other aspects of home-purchase lending in high-foreclosure tracts, including the share of owner-occupied properties and the share of loans to minority borrowers, exhibit similar trends over time as other tracts, though the absolute levels of activity differ (data not shown).

A notable difference between the high-foreclosure and control tracts in home-purchase lending involves borrower income. The mean income of home-purchase borrowers in high-foreclosure tracts, which increased substantially faster than mean incomes in “other” tracts during 2005 and 2006, has declined significantly faster than in the control tracts (figure 10). In each quarter of 2009, the average income of borrowers in the high-foreclosure tracts was over 10 percent lower than the

9. Indexed denial rate for home-purchase loans, by census-tract group, 2004–09

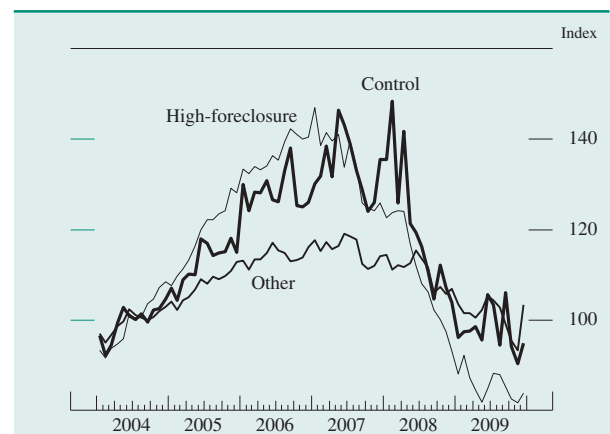


NOTE: See note to figure 8.
SOURCE: Federal Financial Institutions Examination Council, data reported under the Home Mortgage Disclosure Act.

mean had been in 2004. Incomes in both “other” and control tracts also experienced declines and were below their 2004 levels, though the declines were not as severe. The average income of refinance borrowers does not show a similar pattern; instead, the mean income of refinance borrowers has grown over time, regardless of the level of distress in the tract (data not shown).

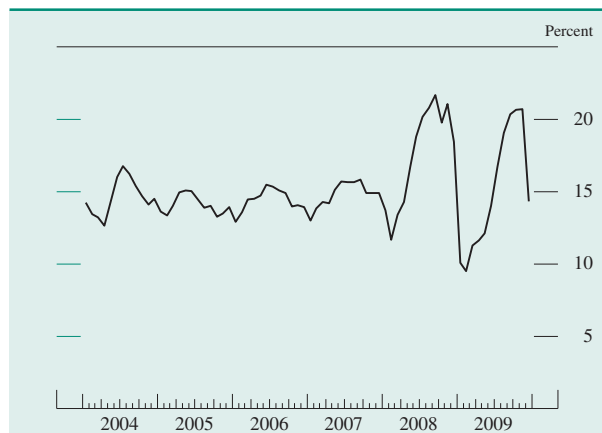
One possible explanation for why borrower incomes have fallen below their 2004 levels for home-purchase borrowers, but not refinancers, may be a larger share of loans to first-time homebuyers. Unfortunately, it is not possible to identify first-time homebuyers in the HMDA data. However, using a second source of data—provided by Equifax and composed of individual, anonymous credit bureau records—we can calculate the share of all individuals taking out a closed-end mortgage (for any purpose) during each month

10. Indexed average income of borrower, by census-tract group, 2004–09



NOTE: See notes to figure 9.

11. Share of first-time borrowers, 2004–09



NOTE: The data are monthly. For information on data calculation, see text; also see text notes 61 and 62.

SOURCE: Authors' calculations based on Equifax data.

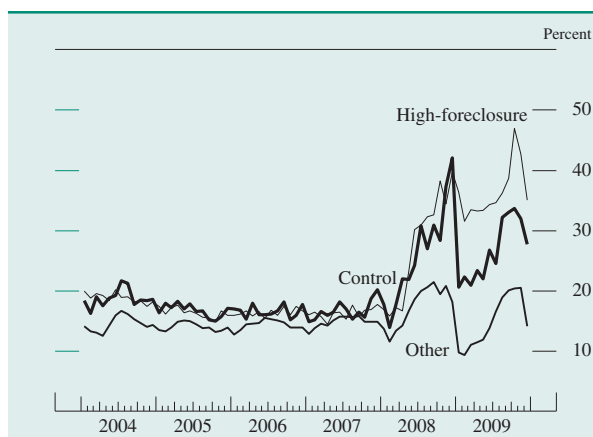
from 2004 through 2009 who had not previously had a mortgage.⁶¹ These data suggest that the share of first-time homebuyers by this metric, which remained around 15 percent between 2004 and 2007, increased sharply beginning in April 2008 to over 20 percent in late 2008 (figure 11). The share of first-time homebuyers again peaked at about 20 percent in 2009.⁶²

A larger share of first-time homebuyers may help explain the observed declines in mean borrower incomes beginning in 2008 (both for the whole market and for high-foreclosure tracts). In the case of high-foreclosure tracts, the increase in the share of first-time homebuyers was particularly steep beginning in April 2008, reaching levels of 40 percent during 2008 (figure 12). This increase was much larger than that observed for the other tracts, though similar to the pattern observed for the control tracts, suggesting that the increase was also experienced in “other” tracts in the same MSAs as the high-foreclosure tracts. However, during 2009, the share of first-time mortgage borrowers in high-foreclosure tracts remained well above the levels observed in the other tracts or in the control

61. This second source of data, from Equifax, is a nationally representative sample of individual credit records, observed quarterly from 1999 through 2009. The data set includes a unique sequence number that allows us to track individual credit experiences over time without any personal identifying information. All of the individuals in our sample remain anonymous.

62. The share of first-time homebuyers calculated using the credit record data differs substantially from the share of loans to first-time homebuyers calculated earlier using tax record data and the HMDA data for several reasons. These include that the former is a share of borrowers while the latter is a share of loans. In addition, the loan purpose, lien status, and occupancy status cannot be easily deciphered in the credit record data. As such, the share calculated in this section using the credit record data includes borrowers who took out junior-lien loans, loans backed by non-owner-occupied properties, or refinance loans and therefore is far lower than the 48 percent of loans to first-time homebuyers cited earlier.

12. Share of first-time borrowers, by census-tract group, 2004–09



NOTE: See notes to figure 11. For definitions of census-tract groups, see text.

tracts. For much of 2009, one-third or more of new mortgage borrowers in high-foreclosure tracts were individuals taking out their first mortgages.

The timing of the increases in the share of first-time homebuyers in April 2008 is consistent with the first-time homebuyer tax credit having increased the number of first-time homebuyers. The effect of the first-time homebuyer tax credit may, however, be overstated by these results. Some of the higher share of first-time homebuyers could be explained by the fact that refinancing activity in these tracts has fallen more rapidly than has home-purchase lending. Unfortunately, it is difficult to distinguish between refinance loans and home-purchase loans in the Equifax data. In other words, the increasing share of first-time homebuyers is a function of both the tax credit effect and differential changes in refinance and home-purchase activity. And it is not possible to determine the relative contributions of these two factors. Nevertheless, a higher share of first-time homebuying in these tracts offers a reasonable explanation for the fall in the mean income of borrowers in high-foreclosure tracts.

DIFFERENCES IN LENDING OUTCOMES BY RACE, ETHNICITY, AND SEX OF THE BORROWER

Analyses of the HMDA data for each year since pricing data were introduced in 2004 have found substantial differences in the incidence of higher-priced lending across racial and ethnic lines—differences that cannot be fully explained by factors included in the HMDA data.⁶³ Analyses have also found differences across

63. See Avery, Brevoort, and Canner, “The 2006 HMDA Data”; Avery, Brevoort, and Canner, “Higher-Priced Home Lending and

groups in mean APR spreads paid by those with higher-priced loans, but such differences have generally been small. Analyses of denial rate data, collected since 1990, have also consistently found evidence of differences across racial and ethnic groups that cannot be fully explained by the information in the HMDA data. Here, we examine the 2009 HMDA data to determine the extent to which these differences persist.

Unfortunately, our analysis of the 2009 pricing data is severely hampered by the introduction of the new pricing threshold in October 2009 and the significant variation in the PMMS–Treasury gap over the year, both of which were discussed earlier. Because the new and old HMDA reporting rules use different, and incomparable, thresholds, we conducted a pricing analysis separately for applications received on or after October 1, 2009, for which the new reporting threshold was in place. For comparison purposes, we also conducted an analysis of loans covered under the old Treasury-based threshold rules, but note that for the reasons discussed earlier, comparison of the two results should be viewed with the utmost caution. Unlike in previous years, we do not report the results of an analysis of mean APR spreads paid by those with higher-priced loans, as the incidence of high-rate lending in 2009 was so low as to make such tests meaningless. The data used for the analysis of racial and ethnic differences in denial rates are unaffected by the problems with the pricing data, so a meaningful comparison can be made with previous years.

The methodology we use for our analysis of both pricing and denial rates can be described as follows. Comparisons of average outcomes for each racial, ethnic, or gender group are made both before and after accounting for differences in the borrower-related factors contained in the HMDA data (income, loan amount, location of the property (MSA), and presence of a co-applicant) and for differences in borrower-related factors *plus* the specific lending institution used by the borrower.⁶⁴ Comparisons for lending outcomes across groups are of three types: gross (or “unmodified”), modified to account for borrower-related factors (or “borrower modified”), and modified to

account for borrower-related factors plus lender (or “lender modified”).⁶⁵ The analysis distinguishes between conventional and nonconventional lending, reflecting the different underwriting standards and fees associated with these two broad loan product categories.⁶⁶

Incidence of Higher-Priced Lending by Race, Ethnicity, and Sex

The portion of the 2009 HMDA data for which we can conduct the most meaningful analysis—applications covered under the PMMS reporting threshold—shows very little variation in the frequency of reported higher-priced lending across racial and ethnic groups (tables 13.A, 13.B, 13.C, and 13.D). This result is driven to a large extent by the fact that the overall incidence of higher-priced lending for all groups is much lower than it was in earlier years. For example, we estimated that 22.7 percent of black conventional refinance borrowers in 2008 paid an interest rate that was more than 1.75 percentage points above PMMS prime.⁶⁷ For loans covered by the new threshold rules, only 6.3 percent of black conventional refinance borrowers were reported to have had an interest rate 1.50 percentage points above the PMMS prime rate. The reduction in the incidence is similar for all groups and all products. Overall, once other factors are accounted for, there are no significant differences in the incidence of higher-priced loans between groups for loans covered by the new rules.

As noted earlier, we also conducted a pricing analysis for loans covered under the old Treasury-based threshold reporting rules. This analysis, reported in the first four data columns of table 13, also shows a much lower incidence of higher-priced lending for all groups than was shown in earlier years. Perhaps as a consequence, pricing disparities among groups, whether gross or controlling for other factors, are much lower than estimated in earlier periods. However, as discussed earlier, the reporting threshold for fixed-rate loans priced in April 2009 or later was much higher than in previous years. Thus, it is not possible to know for sure whether the decline in the reported incidence

the 2005 HMDA Data”; and Avery, Canner, and Cook, “New Information Reported under HMDA,” all in note 14.

64. Excluded from the analysis are applicants residing outside the 50 states and the District of Columbia as well as applications deemed to be business related. Applicant gender is controlled for in the racial and ethnic analyses, and race and ethnicity are controlled for in the analyses of gender differences. For the analysis of loan pricing for loans covered under the Treasury-based threshold, we control for whether the loan was priced in the first three months of 2009 versus the remaining part of the year, since the reporting threshold (under the old rules) differed so much between these two periods. This distinction is possible only because we have access to the information on application and action dates, which are not publicly available.

65. For purposes of presentation, the borrower- and lender-modified outcomes shown in the tables are normalized so that, *for the base comparison group* (non-Hispanic whites in the case of comparison by race and ethnicity and males in the case of comparison by sex), the mean at each modification level is the same as the gross mean.

66. Although results are reported for nonconventional lending as a whole, the analysis controls for the specific type of loan program (FHA, VA, or FSA/RHS) that was used.

67. See Avery and others, “The 2008 HMDA Data: The Mortgage Market during a Turbulent Year,” in note 14.

13. Incidence of higher-priced lending, unmodified and modified for borrower- and lender-related factors, by race, ethnicity, and sex of borrower, 2009

A. Home purchase, conventional loan

Percent except as noted

Race, ethnicity, and sex	Number of loans	Unmodified incidence	Modified incidence, by modification factor		Number of loans	Unmodified incidence	Modified incidence, by modification factor	
			Borrower-related	Borrower-related plus lender			Borrower-related	Borrower-related plus lender
			Old pricing rules ¹				New pricing rules ²	
<i>Race other than white only</i> ³								
American Indian or Alaska Native...	3,519	7.2	5.5	7.7	502	3.6	4.2	3.3
Asian	52,420	2.5	3.9	5.0	11,291	.9	2.5	3.0
Black or African American	21,178	7.3	6.8	7.6	3,220	3.4	3.7	3.8
Native Hawaiian or other Pacific								
Islander	3,093	3.1	4.7	5.3	386	2.1	4.4	4.5
Two or more minority races.....	498	3.8	5.0	5.7	71	.0	2.2	.6
Joint	13,560	2.8	3.7	5.0	2,089	1.5	2.8	3.3
Missing	74,943	2.4	3.1	5.1	12,632	.9	2.1	3.1
<i>White, by ethnicity</i> ³								
Hispanic white	37,725	7.9	6.2	6.4	5,948	6.3	4.4	3.8
Non-Hispanic white	393,916	4.9	4.9	4.9	81,537	3.2	3.2	3.2
<i>Sex</i>								
One male	171,398	5.0	5.0	5.0	34,584	2.9	2.9	2.9
One female	128,179	4.4	4.3	4.7	25,707	2.5	2.5	2.7
Two males.....	11,970	5.4	5.4	5.4	1,769	4.4	4.4	4.4
Two females.....	9,411	3.8	4.3	5.9	1,373	3.3	3.1	1.9

NOTE: First-lien mortgages for owner-occupied, one- to four-family, site-built properties; excludes business loans. For definition of higher-priced lending and explanations of old and new pricing rules and modification factors, see text. Loans taken out jointly by a male and female are not tabulated here because they would not be directly comparable with loans taken out by one borrower or by two borrowers of the same sex.

1. See table 11, note 1.
2. See table 11, note 2.
3. See table 10.A, note 5.

13. Incidence of higher-priced lending, unmodified and modified for borrower- and lender-related factors, by race, ethnicity, and sex of borrower, 2009

B. Refinance, conventional loan

Percent except as noted

Race, ethnicity, and sex	Number of loans	Unmodified incidence	Modified incidence, by modification factor		Number of loans	Unmodified incidence	Modified incidence, by modification factor	
			Borrower-related	Borrower-related plus lender			Borrower-related	Borrower-related plus lender
			Old pricing rules ¹				New pricing rules ²	
<i>Race other than white only</i> ³								
American Indian or Alaska Native...	10,978	6.9	6.2	4.7	1,398	2.7	2.6	1.7
Asian	88,310	1.5	2.9	3.8	16,982	.6	2.2	2.6
Black or African American	70,486	9.0	8.5	6.2	9,554	6.3	6.0	3.7
Native Hawaiian or other Pacific								
Islander	9,207	3.5	4.8	3.6	1,113	1.3	2.3	2.7
Two or more minority races.....	2,000	1.4	3.4	1.7	245	.8	6.4	4.3
Joint	43,100	2.7	3.0	3.3	6,219	1.4	2.0	2.9
Missing	245,310	2.5	2.9	4.0	38,810	1.1	2.0	2.7
<i>White, by ethnicity</i> ³								
Hispanic white	88,837	6.5	5.2	4.9	12,768	4.8	3.6	3.3
Non-Hispanic white	955,406	5.1	5.1	5.1	191,459	2.8	2.8	2.8
<i>Sex</i>								
One male	357,819	4.8	4.8	4.8	64,520	2.5	2.5	2.5
One female	303,443	3.8	4.4	4.4	53,489	3.2	2.6	2.5
Two males.....	27,757	2.8	2.8	2.8	3,466	2.1	2.1	2.1
Two females.....	28,789	3.4	2.7	2.9	3,623	2.6	1.8	1.5

NOTE: See notes to table 13.A.

13. Incidence of higher-priced lending, unmodified and modified for borrower- and lender-related factors, by race, ethnicity, and sex of borrower, 2009

C. Home purchase, nonconventional loan

Percent except as noted

Race, ethnicity, and sex	Number of loans	Unmodified incidence	Modified incidence, by modification factor		Number of loans	Unmodified incidence	Modified incidence, by modification factor	
			Borrower-related	Borrower-related plus lender			Borrower-related	Borrower-related plus lender
			Old pricing rules ¹				New pricing rules ²	
<i>Race other than white only³</i>								
American Indian or Alaska Native...	7,059	5.2	4.7	5.3	1,024	.6	.8	1.5
Asian	23,449	4.6	4.6	5.4	4,490	.8	1.2	1.3
Black or African American	61,000	7.9	6.9	7.5	12,520	2.2	2.3	2.0
Native Hawaiian or other Pacific								
Islander	4,927	5.6	5.8	6.8	710	.7	.6	.7
Two or more minority races	801	4.4	4.1	4.6	120	.8	.6	-.2
Joint	15,731	4.3	5.5	6.2	2,332	.7	1.5	1.0
Missing	65,714	5.3	5.5	5.8	12,139	1.0	1.1	1.1
<i>White, by ethnicity³</i>								
Hispanic white	66,431	7.9	5.8	6.2	13,330	1.4	1.6	1.1
Non-Hispanic white	327,069	5.3	5.3	5.3	78,296	1.1	1.1	1.1
<i>Sex</i>								
One male	179,507	5.9	5.9	5.9	42,427	1.3	1.3	1.3
One female	127,108	6.6	5.5	5.8	29,774	1.5	1.1	1.0
Two males	16,864	7.3	7.3	7.3	2,584	1.1	1.1	1.1
Two females	13,476	7.2	6.5	7.1	2,000	1.3	1.1	1.5

NOTE: See notes to table 13.A.

13. Incidence of higher-priced lending, unmodified and modified for borrower- and lender-related factors, by race, ethnicity, and sex of borrower, 2009

D. Refinance, nonconventional loan

Percent except as noted

Race, ethnicity, and sex	Number of loans	Unmodified incidence	Modified incidence, by modification factor		Number of loans	Unmodified incidence	Modified incidence, by modification factor	
			Borrower-related	Borrower-related plus lender			Borrower-related	Borrower-related plus lender
			Old pricing rules ¹				New pricing rules ²	
<i>Race other than white only³</i>								
American Indian or Alaska Native...	3,868	5.0	7.1	6.2	408	4.4	5.1	4.1
Asian	10,449	5.4	5.8	6.5	1,642	3.2	3.2	1.8
Black or African American	57,330	9.1	9.5	8.9	8,750	5.9	4.0	.9
Native Hawaiian or other Pacific								
Islander	2,867	4.3	5.9	6.5	358	3.1	2.8	4.8
Two or more minority races	586	3.1	2.7	5.0	74	9.5	.9	.0
Joint	12,588	5.0	6.8	7.6	1,753	2.1	3.9	.6
Missing	69,924	8.4	8.8	7.5	9,547	1.9	1.7	.0
<i>White, by ethnicity³</i>								
Hispanic white	35,824	7.8	7.6	7.1	5,874	5.2	3.0	.0
Non-Hispanic white	292,529	7.8	7.8	7.8	53,931	4.8	4.8	4.8
<i>Sex</i>								
One male	135,396	7.8	7.8	7.8	23,718	4.0	4.0	4.0
One female	97,662	9.7	8.0	8.4	17,070	7.6	5.8	6.1
Two males	8,284	7.4	7.4	7.4	1,226	2.0	2.0	2.0
Two females	8,739	7.9	7.2	5.2	1,032	2.6	1.8	.2

NOTE: See notes to table 13.A.

of higher-priced lending reflects less high-priced lending or a higher reporting threshold (although the reported incidence is also lower than in previous years in the first three months of 2009, when a much lower reporting threshold applied). Consequently, great caution should be exercised in drawing any meaningful inference about disparities in pricing across racial and ethnic groups from this portion of the analysis.

With regard to the sex of applicants, no notable differences are evident for either conventional or nonconventional lending or for either of the threshold rules.

Denial Rates by Race, Ethnicity, and Sex

Analyses of the HMDA data from earlier years have consistently found that denial rates vary across applicants grouped by race or ethnicity. In 2009, as in earlier years, for both home-purchase and refinance conventional and nonconventional lending, black and Hispanic white applicants had notably higher gross denial rates than non-Hispanic white applicants (tables 14.A, 14.B, 14.C, and 14.D). The pattern for Asian applicants is similar but much more muted. Denial rates for all groups show modest decreases from 2008 to 2009. For refinance loans, denial rates are

down more substantially from 2008 but still remain much higher than rates for comparable home-purchase applicants. For example, almost one-half of black conventional refinance applicants were denied, versus only one-third of black conventional home-purchase applicants. There is no consistent pattern between conventional and nonconventional lending. Non-Hispanic white conventional and nonconventional home-purchase applicants were denied at about the same rate; nonconventional refinance applicants of the same group were denied at a much higher rate than conventional refinance applicants. Black applicants, however, consistently showed lower denial rates for nonconventional loans than for comparable conventional loans.

Controlling for borrower-related factors in the HMDA data reduces the differences among racial and ethnic groups. Accounting for the specific lender used by the applicant reduces differences further, although unexplained differences remain between non-Hispanic whites and other racial and ethnic groups. Overall, with the exception of the disparity between black and non-Hispanic white applicants for conventional refinance loans, unexplained differences are modestly reduced from 2008. With regard to the sex of applicants, no notable differences are evident for either conventional or nonconventional lending.

14. Denial rates on applications, unmodified and modified for borrower- and lender-related factors, by race and ethnicity, and sex of applicant, 2008–09

A. Home purchase, conventional loan application

Percent except as noted

Race, ethnicity, and sex	Number of applications acted upon by lender	Unmodified denial rate	Modified denial rate, by modification factor		Number of applications acted upon by lender	Unmodified denial rate	Modified denial rate, by modification factor	
			Borrower-related	Borrower-related plus lender			Borrower-related	Borrower-related plus lender
			2008				2009	
<i>Race other than white only¹</i>								
American Indian or Alaska Native...	9,939	29.7	24.6	21.0	6,677	27.7	22.6	20.4
Asian	152,213	18.7	16.6	16.8	160,900	16.6	15.6	15.5
Black or African American	105,001	36.1	29.7	25.4	50,667	32.3	27.4	24.1
Native Hawaiian or other Pacific								
Islander	8,016	26.9	22.7	21.0	5,335	24.1	19.9	17.6
Two or more minority races	1,669	23.6	21.9	23.8	925	26.9	18.0	18.8
Joint	28,195	14.8	17.6	15.3	25,300	13.2	15.2	14.0
Missing	220,395	21.5	19.9	17.0	182,358	19.1	17.5	15.4
<i>White, by ethnicity¹</i>								
Hispanic white	160,823	31.1	22.7	22.0	90,662	25.6	19.7	19.0
Non-Hispanic white	1,425,869	13.6	13.6	13.6	1,159,857	13.1	13.1	13.1
<i>Sex</i>								
One male	640,030	21.3	21.3	21.3	481,586	18.0	18.0	18.0
One female	443,753	19.8	19.4	19.9	336,677	16.9	16.1	16.6
Two males	25,195	21.1	21.1	21.1	21,092	20.2	20.2	20.2
Two females	19,148	20.4	19.3	19.6	15,684	19.1	17.6	17.5

NOTE: First-lien mortgages for owner-occupied, one- to four-family, site-built properties; excludes business loans. For explanation of modification factors, see text. Applications made jointly by a male and female are not tabulated here because they would not be directly comparable with applications made by one applicant or by two applicants of the same sex.

1. See table 10.A, note 5.

14. Denial rates on applications, unmodified and modified for borrower- and lender-related factors, by race and ethnicity, and sex of applicant, 2008–09

B. Refinance, conventional loan application

Percent except as noted

Race, ethnicity, and sex	Number of applications acted upon by lender	Unmodified denial rate	Modified denial rate, by modification factor		Number of applications acted upon by lender	Unmodified denial rate	Modified denial rate, by modification factor	
			Borrower-related	Borrower-related plus lender			Borrower-related	Borrower-related plus lender
			2008				2009	
<i>Race other than white only¹</i>								
American Indian or Alaska Native...	36,265	65.4	56.7	43.0	29,013	44.1	40.4	36.5
Asian	150,970	31.6	35.4	36.1	398,222	22.8	24.8	24.3
Black or African American	343,389	61.2	59.9	44.9	268,726	49.8	44.7	38.3
Native Hawaiian or other Pacific								
Islander	19,275	51.8	52.2	43.4	23,332	38.8	36.4	32.1
Two or more minority races	4,682	50.5	49.7	42.0	4,660	41.8	42.6	33.1
Joint	53,200	41.8	46.0	36.8	114,738	23.4	27.6	25.2
Missing	532,425	41.5	42.5	37.8	964,105	28.9	29.1	25.5
<i>White, by ethnicity¹</i>								
Hispanic white	320,845	50.6	45.3	41.3	323,805	41.0	33.0	30.1
Non-Hispanic white	2,894,154	31.7	31.7	31.7	5,726,883	21.0	21.0	21.0
<i>Sex</i>								
One male	1,125,624	41.5	41.5	41.5	1,621,336	29.6	29.6	29.6
One female	889,334	40.7	39.0	39.6	1,291,103	28.4	27.1	27.5
Two males	32,014	38.2	38.2	38.2	59,147	27.1	27.1	27.1
Two females	35,706	41.7	38.5	36.9	59,281	26.8	26.0	26.7

NOTE: See notes to table 14.A.

14. Denial rates on applications, unmodified and modified for borrower- and lender-related factors, by race and ethnicity, and sex of applicant, 2008–09

C. Home purchase, nonconventional loan application

Percent except as noted

Race, ethnicity, and sex	Number of applications acted upon by lender	Unmodified denial rate	Modified denial rate, by modification factor		Number of applications acted upon by lender	Unmodified denial rate	Modified denial rate, by modification factor	
			Borrower-related	Borrower-related plus lender			Borrower-related	Borrower-related plus lender
			2008				2009	
<i>Race other than white only¹</i>								
American Indian or Alaska Native...	10,154	19.7	20.6	18.6	13,392	18.5	19.4	18.5
Asian	26,711	21.3	19.2	18.6	49,739	18.5	17.7	16.8
Black or African American	161,187	25.0	24.0	22.6	161,885	23.1	21.8	20.6
Native Hawaiian or other Pacific								
Islander	6,581	21.7	18.9	18.3	8,267	19.8	16.3	17.4
Two or more minority races	1,141	23.8	23.3	17.3	1,282	21.5	21.2	19.5
Joint	25,123	14.7	16.2	16.3	28,304	13.7	14.5	13.9
Missing	121,400	21.9	20.8	19.8	161,196	19.3	18.6	17.2
<i>White, by ethnicity¹</i>								
Hispanic white	152,228	24.0	19.8	20.0	198,875	21.4	17.5	17.6
Non-Hispanic white	890,659	14.1	14.1	14.1	1,155,799	13.1	13.1	13.1
<i>Sex</i>								
One male	433,829	19.0	19.0	19.0	590,855	16.9	16.9	16.9
One female	283,404	19.2	17.7	17.8	409,757	16.4	15.7	15.8
Two males	29,772	20.9	20.9	20.9	30,976	21.1	21.1	21.1
Two females	23,519	20.5	18.7	18.5	23,212	20.5	18.5	19.8

NOTE: See notes to table 14.A.

14. Denial rates on applications, unmodified and modified for borrower- and lender-related factors, by race and ethnicity, and sex of applicant, 2008–09

D. Refinance, nonconventional loan application

Percent except as noted

Race, ethnicity, and sex	Number of applications acted upon by lender	Unmodified denial rate	Modified denial rate, by modification factor		Number of applications acted upon by lender	Unmodified denial rate	Modified denial rate, by modification factor	
			Borrower-related	Borrower-related plus lender			Borrower-related	Borrower-related plus lender
			2008				2009	
<i>Race other than white only¹</i>								
American Indian or Alaska Native...	5,229	49.7	49.6	43.6	8,946	39.1	37.3	35.0
Asian	11,836	51.5	49.0	45.1	28,290	41.3	36.4	34.0
Black or African American	155,665	45.0	47.2	46.1	203,611	38.1	39.7	37.5
<i>Native Hawaiian or other Pacific</i>								
Islander	3,643	49.7	47.7	47.2	6,589	38.2	32.9	35.4
Two or more minority races	873	58.2	59.7	53.1	1,491	47.4	44.4	36.7
Joint	14,154	38.7	44.1	42.2	28,105	27.2	33.0	32.5
Missing	165,776	54.6	47.7	43.9	236,542	44.6	40.1	32.6
<i>White, by ethnicity¹</i>								
Hispanic white	73,118	47.6	44.1	44.3	116,354	37.1	35.3	34.4
Non-Hispanic white	662,593	37.5	37.5	37.5	1,157,984	29.9	29.9	29.9
<i>Sex</i>								
One male	300,070	42.8	42.8	42.8	477,570	34.2	34.2	34.2
One female	219,503	44.0	41.2	41.3	345,310	36.0	32.8	33.0
Two males	11,826	41.8	41.8	41.8	17,944	30.6	30.6	30.6
Two females	13,808	41.2	40.3	40.3	19,001	34.3	31.7	30.8

NOTE: See notes to table 14.A.

Some Limitations of the Data in Assessing Fair Lending Compliance

In interpreting the findings in this section, it is important to note that both previous research and experience gained in the fair lending enforcement process show that differences in loan outcomes among racial or ethnic groups stem, in part, from credit-related factors not available in the HMDA data, such as measures of credit history (including credit scores), LTV and PTI, and differences in choice of loan products. Differential costs of loan origination and the competitive environment also may bear on the differences in pricing, as may differences across populations in credit-shopping activities. It is also important to note that the absence of the finding of disparities in pricing across groups

does not mean that such disparities do not exist; the reporting threshold for pricing under HMDA may simply have been set too high to detect them.

Differences in pricing and underwriting outcomes may also reflect discriminatory treatment of minorities or other actions by lenders, including marketing practices. The HMDA data are regularly used to facilitate the fair lending examination and enforcement processes. When examiners for the federal banking agencies evaluate an institution’s fair lending risk, they analyze HMDA price data in conjunction with other information and risk factors, as directed by the Interagency Fair Lending Examination Procedures.⁶⁸

68. The Interagency Fair Lending Examination Procedures are available at www.ffiec.gov/PDF/fairlend.pdf.

APPENDIX A: REQUIREMENTS OF REGULATION C

The Federal Reserve Board's Regulation C requires lenders to report the following information on home-purchase and home-improvement loans and on refinancing loans:

For each application or loan

- application date and the date an action was taken on the application
- action taken on the application
 - approved and originated
 - approved but not accepted by the applicant
 - denied (with the reasons for denial—voluntary for some lenders)
 - withdrawn by the applicant
 - file closed for incompleteness
- preapproval program status (for home-purchase loans only)
 - preapproval request denied by financial institution
 - preapproval request approved but not accepted by individual
- loan amount
- loan type
 - conventional
 - insured by the Federal Housing Administration
 - guaranteed by the U.S. Department of Veterans Affairs
 - backed by the Farm Service Agency or Rural Housing Service
- lien status
 - first lien
 - junior lien
 - unsecured
- loan purpose
 - home purchase
 - refinance
 - home improvement
- type of purchaser (if the lender subsequently sold the loan during the year)

- Fannie Mae
- Ginnie Mae
- Freddie Mac
- Farmer Mac
- Private securitization
- Commercial bank, savings bank, or savings association
- Life insurance company, credit union, mortgage bank, or finance company
- Affiliate institution
- Other type of purchaser

For each applicant or co-applicant

- race
- ethnicity
- sex
- income relied on in credit decision

For each property

- location, by state, county, metropolitan statistical area, and census tract
- type of structure
 - one- to four-family dwelling
 - manufactured home
 - multifamily property (dwelling with five or more units)
- occupancy status (owner occupied, non-owner occupied, or not applicable)

For loans subject to price reporting

- spread above comparable Treasury security for applications taken prior to October 1, 2010
- spread above average prime offer rate for applications taken on or after October 1, 2010

For loans subject to the Home Ownership and Equity Protection Act

- indicator of whether loan is subject to the Home Ownership and Equity Protection Act